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the oak, beech, elm and maple; spruce, pine, and other coniferous trees; elm, ash, birch, linden, basswood, butternut, wild plum, and crab apple.

The N. E. portion of the State is known as the mineral region and is quite rich in mineral resources. The most productive of recent years was 1928, when the total output had a value of \$108,725,000, iron ore leading with 45,761,000 tons, which was 60 per cent. of the total quantity mined in the United States.

The fertility of the soil, the extent of the country, and the abundance of water, make Minnesota an ideal agricultural State. In 1925 the estimated value of all farm property was \$2,761,684,227, and in the calendar year, 1929, there was a total output of farm crops as follows: oats led with 153,738,000 bu., followed by corn, 148,855,000 bu., barley, 59,400,000 bu., potatoes, 25,896,000 bu., and wheat, 19,944,000 bu. On Jan. 1, 1930, the farms had 3,342,000 swine, 2,841,000 cattle, 1,512,000 cows, 805,000 sheep, and 771,000 horses.

In 1927 the State had 3,886 manufacturing plants, employing 98,833 wage earners, paying \$123,619,000 for wages, \$726,391,000 for raw materials and yielding products to the combined value of \$1,066,727,000.

In 1928 the public school enrollment was 552,794 pupils. There were over 9,000 elementary schools and 18,000 teachers. For higher education there were 562 public high schools, with 5,140 teachers, and 112,625 pupils; and 29 colleges, universities and professional schools.

Religious organizations were reported in 1925 as numbering 4,657, having a total of 830,000 members, 4,200 churches and property valued at over 35 million dollars. The strongest denominations were the Roman Catholic, Lutheran, Methodist, Presbyterian, and Congregational bodies in the order stated.

The total length of the railroads in the State in 1928 was 8,822 miles of steam, and 723 miles of electric, the former representing 12 great systems.

In 1927 the State revenue was \$63,222,326; the expenditures, \$52,591,562; the assessed valuation of all taxable property, \$2,365,019,180; the tax

levy, \$14,364,000; and the debt, less sinking fund assets, \$11,715,328.

All reporting banks numbered 1,072 with combined resources of \$1,127,571,000 and total deposits of \$889,408,000.

The governor is elected for a term of two years, and receives a salary of \$7,000 per annum. Legislative sessions are held biennially and are limited to 90 days each. The Legislature has 67 members in the Senate and 131 in the House, each of whom receives \$1,000 per annum. There are 10 Representatives in Congress.

The site of the present State of Minnesota was first visited by a French exploring party under Louis Hennepin, a Franciscan priest, who ascended the Mississippi river as far as the Great Falls. By the treaty of Versailles in 1763, this region was ceded to Great Britain, and in 1766 it was explored by Jonathan Carver, a native of Connecticut. In 1783 the Northwest Territory including Minnesota, E. of the Mississippi, was ceded to the United States. No attempt was made to extinguish the Indian title till 1805, when a purchase was made of the tract of land for military purposes at the mouth of the St. Croix, and another at the mouth of the Minnesota river, including St. Anthony's Falls. In 1827 a small tract of country between the St. Croix and Mississippi was ceded by the Indians to the United States, and lumbering operations commenced upon the St. Croix. The Territory of Minnesota was established, and the government organized in 1849. It embraced nearly twice the area of the present State, its W. limits extending to the Missouri and White Earth rivers. In 1851 the Sioux ceded to the United States all their lands in the territory between the Mississippi and Big Sioux rivers and in 1858 Minnesota was admitted to the Union. That portion of the State lying E. of the Mississippi belonged originally to the "territory N. W. of the Ohio," while that portion W. of the Mississippi was included in the territory known as the Louisiana Purchase. In 1862 the Indians attacked the frontier settlements, and in a few days killed about 800 settlers. In consequence the Sioux and Winnebagoes were removed from the State, and their lands opened to settlement.

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**Minnesota River**, a river which flows through Minnesota.

**Minnesota, University of**, a co-educational non-sectarian institution in Minneapolis, Minn.; founded in 1868. Four federated colleges are connected with it: (1) for science, literature, and arts; (2) for agriculture; (3) mechanics and engineering; (4) medicine.

**Minniwakan, or Devil Lake**, in North Dakota, a large lake on the S. border of the Salt Water Region; length about 50 miles, average breadth 15 miles; area about 750 square miles. The waters are too brackish to be drunk by man, though wild animals drink them freely. It has no apparent outlet, and is of a deeper tint than the neighboring fresh-water lakes.

**Minnow, or Minim**, a well-known fish. It grows to a length of seven inches in favorable localities; its average size is about three inches. It is generally found in the same streams with trout, and swimming in schools.

**Minor**, in ordinary language, a person who is under age; one of either sex who is under a certain age, and therefore legally incapacitated for the performance of certain acts.

**Minor Prophets, The**, so-called from the brevity of their writings, are 12 in number, viz., Hosea, Joel, Amos, Obadiah, Jonah, Micah, Nahum, Habakkuk, Zephaniah, Haggai, Zechariah, and Malachi.

**Minos**, in Greek mythology, a ruler of Crete, said to have been the son of Zeus and Europa, and a brother of Rhadamanthus. During his lifetime he was celebrated as a wise lawgiver and a strict lover of justice, and after his death he was made, with Æacus and Rhadamanthus, one of the judges of the infernal world. Also another legendary King of Crete, who forced Athens to send yearly seven boys and seven girls to be devoured by the minotaur.

**Minotaur**, in Greek mythology, a monster half man and half bull.

**Minot's Ledge, or Cohasset Rocks**, in Massachusetts, a promontory and lighthouse on the S. W. shore of Boston Harbor. It exhibits a fixed light 66 feet high.

**Minster**, the church of an abbey or priory; but often applied, like the

German "Munster," to cathedral churches without any monastic connection.

**Minstrel**, a singer and performer on musical instruments. Minstrels in the Middle Ages were a class of men who lived by the arts of poetry and music. The minstrels in later times formed a separate guild, uniting for the purposes of mutual protection and support.

**Mint**, the name given to several herbaceous aromatic plants. They are nearly all perennial, are widely distributed throughout temperate regions, and abound in resinous dots which contain an essential oil. Mint has an agreeable odor, and partakes in the highest degree of tonic and stimulating properties. Spearmint is generally used, mixed with vinegar and sugar, in sauce. Peppermint yields the well-known stimulating oil of the same name. Pennyroyal is used for the same purposes as peppermint.

**Mint**, the place where a country's coinage is made and issued under special regulations and with public authority. In former times the coinage was made by contract at a fixed price. In the United States there are mints at Philadelphia, established in 1792; at San Francisco, established in 1853; at Carson City, established in 1869, discontinued since May, 1893, and now conducted merely as an assay office; at Denver, established in 1862; and at New Orleans, established in 1835.

In the United States the Bureau of the Mint was established as a division of the Treasury Department in 1873. It has charge of the coinage for the government and makes assays of precious metals for private owners. The rolling machines are four in number. The rollers are adjustable and the space between them is governed by the operator. About 200 ingots are run through per hour on each pair of rollers. When the rolling is completed the strip is about six feet long. As it is impossible to roll perfectly true it is necessary to "draw" these strips, after being softened by annealing. The drawing benches resemble long tables, with a bench on either side, at one end of which is an iron box secured to the table. In this are fastened two perpendicular steel cylinders. These are at the same distance apart

that the thickness of the strip is required to be. It is drawn between the cylinders, which reduces the whole to an equal thickness. These strips are now taken to the cutting machines, each of which will cut 225 disks per minute. The press used consists of a vertical steel punch. From a strip worth \$1,100 about \$800 of disks will be cut. They are then removed to the adjusting room, where they are adjusted. After inspection they are weighed in very accurate scales. If a disk is too heavy, but near the weight, it is filed off at the edges; if too heavy for filing, it is thrown aside with the light ones to be remelted. The disks after being adjusted, are taken to the coining and milling rooms, and are passed through the milling machine. They are fed to this machine through an upright tube, and as they descend are caught on the edge of a revolving wheel and carried about a quarter of a revolution, during which the edge is compressed and forced up. By this apparatus 560 half-dimes can be milled in a minute; for large pieces the average is 120. The massive but delicate coining presses coin from 80 to 100 pieces a minute. These presses are attended by women and do their work in a perfect manner. After being stamped the coins are taken to the coiner's room. The light and heavy coins are kept separate and when delivered to the treasurer they are mixed in such proportions as to give him full weight in every delivery. By law, the deviation from the standard weight must not exceed three pennyweights in 1,000 double eagles.

**Minto, Gilbert John Murray Kynmond Elliot, 4th Earl of**, an English military officer; born July 9, 1847. He was educated at Eton and Cambridge; served with the Turkish army in the Afghan war; was private secretary to General Lord Roberts at the Cape; volunteer in the Egyptian campaign; military secretary to the governor-general of Canada (the Marquis of Lansdowne); chief of staff in N. W. Canadian rebellion; Governor-General of Canada, 1898-1904; Viceroy of India, 1905-10. He died Feb. 28, 1914.

**Minuet**, the name of a dance said to have been invented in Poitou about

the middle of the 17th century, and continued to be fashionable till the reign of George III. Also a time or air suited for the dance so called, or composed to the same time.

**Minuit, Peter**, an early governor of New Netherland (now New York); born 1580; died 1641. He is best known by his purchase of Manhattan Island, for about \$24.

**Minute Men**, in the American Revolutionary War, the militia, who were prepared for service at a minute's notice.

**Miocene**, in geology, a term designating the beds formerly called Middle Tertiary. The term Miocene denotes that only a minority of the shells belong to recent species.

**Miquelon, Great and Little**, two islands connected by a long, narrow, sandy isthmus, off the S. W. coast of Newfoundland; area 83 square miles. With St. Pierre they form the sole remaining colony of France in North America. The sole occupation of the inhabitants is fishing.

**Mir**, the Russian commune, consisting of the inhabitants of one or more villages, who are as a community owners of the surrounding land, and redistribute the same to the members from time to time.

**Mira**, or **Stella Mira** (the wonderful star), the star Omicron Ceti, a remarkable variable. It is in the neck of "the whale." Its variability was discovered in 1596. The period is somewhat irregular, but averages about 331 days. During the greater part of this time the star remains of about the 9th magnitude, but during about 100 days it rises to a maximum which may vary from the 2d to the 5th magnitude, remains for a week or 10 days there, and then sinks to its minimum again. When shining with a brightness of the 2d magnitude, it is giving out more than 600 times as much light as when at the 9th magnitude.

**Mirabeau, Andre Boniface Riquetti**, a French viscount who served with bravery in the American War of Independence, but fought against his own country in the French Revolution. Born in Bignon, France, Nov. 30, 1754; killed accidentally at Freiburg, Baden, Sept. 15, 1792.

**Mirabeau, Honore Gabriel Riquetti, Count de**, one of the most celebrated characters of the French Revolution; born in Bignon, Provence, France, March 9, 1749. In 1784 he visited London, and afterward Berlin; and was variously employed in literary quarrels and occupations till the commencement of the French Revolution. This offered Mirabeau an ample field for his activity. He was elected for Aix and Marseilles to the States-General as deputy of the third estate. The story of his life thenceforth would be the history of the assembly. At first a leader of the Revolution he saw the terrible possibilities of the storm he had helped to evoke, and arranged with the court to use his great influence in checking it. Before he could carry his intentions into effect, a sudden illness terminated his existence in Paris, France, April 2, 1791.

**Miracle**, a wonderful sight or thing. An event or effect contrary to the established course of things, or a deviation from the known laws of nature.

**Miracle Plays**, a sort of dramatic entertainments common in the Middle Ages, in which the subjects were taken from the lives of saints and the miracles they wrought. They were originally performed in church, but latterly outside, in market places and elsewhere.

**Mirage**, an optical illusion by which images of distant objects are seen as if inverted, below the ground or raised in the atmosphere. It is frequently observed on the western plains of the United States. The phenomenon is best observed in the Egyptian or other deserts, and the inverted images so much resemble those made in water as to create the illusion that a lake is really near. The mirage was known in ancient Jewish times; it is mentioned in Isaiah xxxv: 7, "And the parched ground shall become a pool and the thirsty land springs of water." The Fata Morgana, what sailors call the "loomings," the Flying Dutchman, the Enchanted Island, Cape Flyaway, etc., are all produced by the mirage.

**Miramón, Miguel**, a Mexican military officer; born in the City of Mexico, Sept. 29, 1832; became a stu-

dent in the government military academy in 1846; participated in the defense of Chapultepec and Molino del Rey 1847; returned to the academy after the war and was graduated with honors; was commissioned a colonel in 1855. He joined the insurrectionary movement and took Puebla, but in March, 1856, that place was retaken and he was captured. He soon escaped, and began a guerilla warfare. In 1858 when Zuloaga became president he was made a Brigadier-General; in December, 1858, the government of Zuloaga was overthrown and in January, 1859, Miramon was chosen provisional president of the Conservative government. He was defeated by the forces of the Liberal party at the battle of Calpulalpam on Dec. 22, 1860, and soon afterward fled to Europe. When the regency was installed in 1863 he returned to Mexico, but his services were declined and he was again compelled to flee the country. Later, his offer was accepted by Maximilian and he returned in November, 1866. He was placed in command of a division which suffered defeat at the battle of San Jacinto, Feb. 1, 1867. Subsequently he was captured and shot with Maximilian and Mejia in Queretaro, June 19, 1867.

**Miranda, Don Francisco**, a Spanish-American military officer; martyr in the cause of freedom in South America; born of an old Spanish family in Caracas, Venezuela, June 9, 1756. He presented to different courts plans for the emancipation of the Spanish-American colonies, and with this view went to Paris in 1792. Some time after, he was imprisoned in consequence of his political intrigues. In 1794 he was liberated, but received orders to quit France, and took refuge in England. Having procured some secret assistance, he sailed from New York in 1806 with one ship and a number of volunteers, and landed in Venezuela; but his attempts to arouse the inhabitants were unsuccessful, and he found himself compelled to reëmbark. In 1810 he renewed his attempt with more success, but was finally obliged to capitulate to the Spanish general Monteverde, who, in violation of the articles of surrender, treated him as a pris-

oner. Miranda was sent to Spain and confined in the dungeons of the Inquisition of Cadiz, where on July 14, 1816, he died, after an imprisonment of four years.

**Miribel, Marie Francois Joseph de**, a French military officer, chief of the general staff of the French army; born in Montbonnet, Isere, France, in 1831. He was at the siege of Sebastopol, and in the Italian campaign in 1850; served under Bazaine in Mexico, and during the siege of Paris by the Germans was conspicuous for his gallantry. In 1890 he was made chief of the general staff of the army. By the French he was regarded as their greatest living strategist. The efficiency attained by their army in recent years is attributed to his masterly direction. He died Sept. 11, 1893.

**Mirror**, a smooth surface capable of regularly reflecting a great proportion of the rays of light that fall on it.

**Mirza** (a contraction of Emir Zadah, "son of the prince"), a Persian title, equivalent to "Prince" when it follows the surname, and merely the common title of honor (like "Mr.") when it is prefixed to it.

**Misdemeanor**, an offense against the laws of a less heinous nature than a felony.

**Miserere**, a name given to a psalm in the Roman Catholic service, taken from the 51st psalm of the Vulgate, beginning "Miserere mei Deus" (Have Mercy on me, O God). Also a piece of music composed for these words.

**Mishna, or Mishnah**, in Jewish literature the second or oral law, supposed to have been given to Moses to be transmitted to the doctors of the written law in all ages. Also the collection of traditional laws, each one of which is called Mishna, or Halacha. The name Mishna is especially given to the canonical work edited by Jehudah, the Prince (born about A. D. 150). It contains an abstract of the more ancient Halacha collections made by his predecessors.

**Misrepresentation**, in law, a false statement affecting the validity of a contract or transfer of property. Wilful misrepresentation is the same as fraud.

**Missal**, the book containing the whole service of the mass throughout the year. In its present arrangement its dates from about the middle of the 14th century.

**Missing Link**. What was claimed to be the missing link between man and the ape was found in 1895, of parts of a fossil in strata on the banks of the Bengawan river, in Central Java. These remains consist of a skull, a thigh bone, and two molar teeth, and from them scientists have constructed an animal, not human, yet nearer to man than the ape. The brain capacity of the skull is as far below that of the lowest existing man, the Papuan, as it is above that of the highest known ape, the chimpanzee. The teeth also show a mixture of human and ape characteristics. The formation of the skull and the thigh bone indicate that the animal walked in an upright position. In 1902 reports were published to the effect that an animal nearer man than the ape had been found alive in Java, and died in the hands of its captors.

**Missions**, an organized method of propagating a religion; specifically, the propagandism of Christianity among the heathen, based on the command "Go ye into all the world and preach the Gospel to every creature."

The Gospel made great progress during the lifetime of the apostles and found a footing in most countries to the E. and N. of the Mediterranean. It was successfully introduced into Egypt and other African regions. As the result of "the persecutions which arose about Stephen" thousands of converts were scattered abroad and went everywhere "preaching the word." Through the labors of these primitive evangelists under the direction of the apostles, Christian churches were founded in many places. Within a century after Christ the Gospel had probably been preached over a large part of the Roman world. Alexandria early became noted for its missionary college from which teachers were sent to all parts of the world. In 306 19 bishops assembled at Elvira in Spain. Before the time of Constantine there were churches of considerable extent in the S. and N. sections of Britain due not so much to missionaries as to the natural intercourse of Britain

with Rome. These churches, however, became distinguished for their missionary zeal and Saint Patrick is commonly regarded as their leader. He found Ireland entirely heathen and lived to see it become Christian. As the Scotch Patrick was the apostle to Ireland, so in a certain way was the Irish Colomba the apostle of Scotland. The island of Iona with its monastery became a sort of missionary center and Aidan went from there to Northumbria and established missions. The Scotch-Irish missionaries were the evangelists of a large part of the European continent.

The English Boniface became the apostle of Germany. Ansgar, a monk of Corvey in the 9th century, preached in Denmark and Sweden. The story of the mission of the two bishops, Cyril and Methodius, corresponding almost precisely with the conquest of the Slavs by the Variags, is most interesting. This dates back to the year 860. The Russian prince Vladimir was baptized in 988 with all of his sons and his people. What the Irish and the Scots had been doing for Europe in the early Middle Ages the Nestorians had been attempting in Asia. Kublai Khan, a grandson of the famous Genghis Khan, a ruler of the E. Mongol empire, was anxious to learn about Christianity and sent for missionaries to tell him about the new doctrine. It is supposed that the Nestorian-Tartar church flourished till the country was devastated by the Mongols. It is almost certain that the Nestorians introduced the Gospel into India and that they passed through Tartary into China and founded churches there which existed till the end of the 9th century.

The Roman Catholics after the discovery of the new world founded several missionary orders, whose object was the extension of the Church among the Mussulmans of Spain, North Africa and Western Asia. Francis Xavier was sent as an apostolic nuncio for India. Dominican missionaries made many converts on the W. shores of Africa. The story of the Roman Catholic missions to North and South America belongs to the romance of history, being full of wonderful adventures, unselfishness, sacrifice and courage. In 1622 Pope Gregory XV. established a society for the propaga-

tion of the Gospel, and that has ever since controlled the mission enterprises of the Church. It has its seat in Rome where there is a college for the training of missionary priests.

Not till two centuries after the Reformation was there any organized attempt made by the Protestants to establish missions. In 1555 a company of men including several missionaries sailed for Brazil with a hope of establishing there an asylum for the Huguenots. The condition of the savage tribes attracted their attention and they made attempts to reach them. They themselves, however, were persecuted and the enterprise was unsuccessful. Those who had not been killed returned to France within a year. Thus the hopes of Coligny and of John Calvin who had taken an interest in the expedition were disappointed. In 1559 Gustavus Vasa sent a missionary to Lapland, but it was more than half a century before the Christianization of the country was placed on a firm basis. In 1612 a college for the training of missionaries was established at the University of Leyden and a few years later the Dutch introduced Christianity into Java. John Eliot, "the apostle of the Indians," came to America early in the 17th century under the auspices of the Corporation for the Spread of the Gospel in New England. Bishop Berkeley labored for the foundation of a missionary college in Bermuda; and the Society for the Propagation of the Gospel in Foreign Parts was founded in 1701. Its first missionary to India sailed in 1818. In the middle of the 17th century a party of men of Lubeck decided to engage in foreign missionary work. One of the party named Peter Heiling went to Abyssinia and did good work there. In 1664 the Austrian Baron von Welz renounced his title and went to Dutch Guiana as a missionary. Leibnitz, in 1700, urged the Berlin Academy to occupy itself with the propagation of true faith and Christian virtue among the remote and unconverted nations, especially China.

Early in the 18th century the first Protestant mission was sent to India. The first missionaries were two men who went to the Coromandel coast of India, where they learned the Tamil language and prepared a translation



of the Bible. This mission was known as the Danish-Halle Mission and continued throughout the greater part of the 18th century. In 1731 Count Zinzendorf, the patron of the United Brethren called the Moravians, visited Copenhagen and there saw two Eskimos and a negro boy from the Danish West Indies. When he returned to Herrnhut he told the story and two of the Moravians resolved to go to St. Thomas and teach the slaves the Gospel. This was the beginning of the missionary enterprises of the Moravians.

In 1786 Thomas Coke, the Methodist who had been sent to Nova Scotia to preach Methodism among the settlers, was driven to the West Indies by a storm and began to realize the conditions of the heathen world. The story which he brought back was the foundation of the Methodist missions which have been so extensive throughout the world.

William Carey was the first person to urge effectually on British Protestants the duty of missions and the first English Protestant to engage personally in the work. In 1793 he, with his family, set sail for India and landed at Calcutta where he laid the foundations of the later missions in Asia. In 1818 the mission in Madagascar was established. The Church of England felt the impulse of missions and in 1799 started a society for missions to Africa and the East which was afterward called the Church Missionary Society for Africa and the East. Their first expedition was to West Africa. They went to New Zealand in 1814, the Levant in 1815, India in 1816, and Ceylon in 1817. Work among the Indians of Northwest America in 1826, work in equatorial Africa in 1844, in China in 1845 and in Japan in 1869 was carried on by this remarkable society. The Wesleyan Missionary Society was formed in 1814 and entered the field in South Africa. Missions in New South Wales were established in 1815, in Tasmania in 1821, among the Maoris of New Zealand in 1822, in the Friendly Islands in 1826, in the Fiji Islands in 1834, in Victoria in 1838, in Queensland in 1850, and in China in 1853.

The American Board of Missions was organized at Bradford, Mass., June 29, 1810. In January, 1812, the

first missionaries sailed to India, but when they reached Calcutta they were ordered home by the British East India Company. Two of the missionaries to India changed their views in regard to baptism and this led to the formation of the American Baptist Missionary Union in May, 1814. The first actual mission established in foreign lands was established among the Marathos of Western India. The Ceylon mission was begun in 1816. Missions were opened among the Cherokee Indians in 1817 and among the Choctaws in 1819. The first mission in the Hawaiian Islands was established in 1819. The first missionary to China went out in 1829. In 1830 missions were established in Asia Minor and Persia and in 1831 in Athens. The Gabun mission in West Africa was sent out in 1834, and that to the Zulus in South Africa in 1835; that in Japan in 1869.

Reports of the various Protestant Missionary Societies of the United States for 1926, showed that the number of American missionaries in heathen lands was around 10,000 of whom nearly 50% were women.

**Missions, War.** On April 4, 1917, the U. S. Senate passed a resolution declaring that a state of war existed between the United States and the Imperial German Government, and on the following day the House of Representatives also passed it. With this entrance of the United States into the World War, the principal countries opposed to the Central Powers sent special missions, headed by distinguished statesmen, to the United States for conferences for united action. Such representatives of Great Britain, France, Italy, Belgium, Russia and Japan were given a cordial reception by President Wilson, the Congress, and great masses of citizens wherever they went. After the overthrow of the Russian monarchy (March 16, 1917) and the establishment of a Provisional Government, the United States sent a mission to Russia to hearten the people at the dawn of their democracy.

**Mississippi,** a State in the South Central Division of the North American Union, admitted to the Union, Dec. 10, 1817; number of counties 82; area 46,865 square miles; pop. (1930) 2,007,743; capital, Jackson.



## Mississippi

The State is divided into two portions by a low broad water-shed between the rivers flowing toward the Atlantic, and the streams emptying into the Mississippi. A lateral branch of this ridge terminates in the bluff of Vicksburg. E. of this ridge, the surface of the State consists of broad rolling prairies, while to the W. the land is broken into valleys and ridges. The principal ports on the Mississippi river are Vicksburg and Natchez.

In the N. section and the uplands of the central portion the soil is very fertile, but the land in the Mississippi bottoms, though of exceeding fertility in places, contains much clayey and wet ground. The principal trees are the oak, willow, chestnut, wateroak, walnut, butternut, dogwood, black gum, sweet gum, beech, cottonwood, sycamore, magnolia, locust, mulberry, hickory, pine, cypress, and live oak.

The prairie regions in the N. W. of the State has always been noted as having the best farming land in the South. In 1925 the value of all farm property was estimated at \$550,570,838. In the calendar year 1929 there was a total output of 1,915,000 bales of cotton valued at \$164,690,000, and 35,300,000 bu. of corn besides enormous quantities of rice, wheat, oats and potatoes. On Jan. 1, 1930, live-stock on farms was as follows: 96,000 horses, 343,000 mules, 410,000 cows, 902,000 other cattle, 620,000 swine, and 34,000 sheep.

In 1927 the State had 1,333 manufacturing plants, employing 50,569 wage earners, paying \$40,734,000 in wages, \$105,559,000 for raw materials and yielding products having a combined value of \$196,641,000.

In 1928 the public school enrollment was 605,533 pupils. There were 15,152 teachers. In higher education there were 28,428 pupils and 1,441 teachers in the public high schools. There were 18 colleges and universities.

Religious organizations were reported in 1925 as numbering 7,201, having 632,400 members, 6,772 churches, and property valued at \$11,978,420. The strongest denominations were the Baptist, Methodist, Roman Catholic, and Presbyterian in the order stated.

The total length of railroads in the

## Mississippi River

State in 1928 was 4,226 miles of steam and 47 miles of electric.

In 1927 the State revenue was \$16,265,081. The State debt was \$17,142,853 and the value of all property was \$724,107,850. There were 35 National Banks with resources totaling \$96,100,000 and State banks and Trust companies with savings deposits amounting to \$99,600,000.

Mississippi is about the size of Pennsylvania and Rhode Island, combined, a little smaller than Louisiana and the 31st state in area.

Institutions for the insane are at Jackson and Meridian. There is a State hospital at Natchez and another at Vicksburg. Penitentiaries are located on farms owned by the State. The schools for the deaf, dumb and blind are at Jackson.

The governor is elected for a term of four years and receives a salary of \$5,000 per annum. Legislature sessions are held biennially and are limited to 60 days. In 1928 the Senate had 19 members and the House 139, elected for four year terms. There were 8 Representatives in Congress.

Mississippi was originally part of the colony of Louisiana, being settled by the French in 1716. In 1728 the settlers were nearly exterminated by the Indians, and in 1763 the territory was ceded to Great Britain. At the end of the Revolution it became a territory of the United States, and was admitted to the Union as a Federal State Dec. 10, 1817. In 1861 it passed an ordinance of secession, took a prominent part in the Civil War, and finally, in January, 1869, was readmitted to representation in Congress, after ratifying the 15th amendment. In 1916 eight cities were under commission government.

**Mississippi, University of**, a co-educational, non-sectarian institution in University, Miss.; founded in 1848.

**Mississippi College**, an educational institution in Clinton, Miss.; founded in 1850 under the auspices of the Baptist Church.

**Mississippi River**, (from an Indian word signifying Great Water, or Father of Waters), a river of the United States, forming with its tributaries one of the great water systems of the world. From the headwaters of the Missouri, which is now recog-

nized as the parent stream (the upper Mississippi being really a tributary) to the mouth of the Mississippi is a distance of 4,200 miles, the longest river course in the world. It drains an area of 1,246,000 square miles, occupied by the States lying between the Appalachian mountains on the E., the Rocky Mountains on the W., the Great Lakes on the N., and the Gulf of Mexico on the S. There are several cataracts, the best known being the Falls of St. Anthony at Minneapolis, Minn., marking the headwaters of navigation. The falls are 16 feet in height. Rapids occur for several miles farther down. At the junction of the Des Moines river, the Mississippi is a mile broad, with clear waters of a bluish tint. There are numerous islands and the current averages 2 miles an hour. The principal affluents above the entrance of the Missouri are the St. Peter's, St. Croix, Chippewa, Wisconsin, Rock, Des Moines and Illinois. Below the junction of the Missouri the character of the river, which is here about one and a half miles broad, and of a muddy nature, is due to its tributary. The united waters have only, from their confluence to the mouth of the Ohio, a width of about three-quarters of a mile. The junction of the Ohio seems also to produce no increase of surface; and the river, in its natural state, is still narrower at New Orleans, which is only 120 miles from its mouth. Its depth, nevertheless, is so much increased that, at the shallowest places, there are usually six feet of water when the river is lowest. The rapidity of the current is more than doubled. Accidental circumstances often shift the current on to the islands or bends of the river, and every season makes great changes in the channel. Thus, by continually shifting its course, the Mississippi sweeps away, during a great portion of the year, considerable tracts of alluvium, which were gradually accumulated by the overflow of former years. About 190 miles below the confluence of the Missouri, the Mississippi receives the Ohio, flowing, with its light-green stream, from the E., bringing with it also the waters of its tributaries. At this point, not only does the stream turn S. W., but the bluffs retire and a plain extends on both sides of the river, ranging from

30 to 50 miles in breadth, still expanding as it approaches the mouth, where it is probably three or four times that width. About 380 miles below the influx of the Ohio, is the junction of the Arkansas and White rivers, which enter the main stream close to each other on the W. bank. Thence to the confluence of the Red river is a distance, S. by W., of 360 miles, measured along the stream; and below this latter point the river trends S. E., and enters the Gulf of Mexico, after a course of 335 miles from the Red river.

The lower part of the Mississippi is so much flooded after the rainy season that there is often a space of inundated woodland from 30 to 100 miles in width; large swamps and bayous are found on both sides of the river. The Mississippi is subject to inundations, often destructive in their effects. To secure the land from these inundations, immense embankments, or levees, have been formed along the Mississippi, and the canals or bayous through which its waters overflow. Below the Arkansas river dilatation the swamps receive a vast body of water, by which means the current becomes less rapid. As soon as the river enters the delta, its rapidity is further slackened through the diffusion of its waters into various subordinate channels. From this point to New Orleans no variation is perceptible. The white waters of the Mississippi do not readily mix with the sea, and may be distinguished from 9 to 14 miles from Balize. De Soto, 1541, was the first European who explored the Mississippi. He died upon it, and was buried in it. Marquette and Joliet in 1673, and La Salle in 1682, made explorations, the latter descending to its mouth.

**Mississippi River Improvements.** As early as 1866 the attention of the United States government was directed to the improvement of the Mississippi. At that date James B. Eads laid plans before Congress looking to the removal of snag obstructions, but no money was appropriated. By 1879 Mr. Eads had succeeded in deepening the mouth of the Mississippi to a considerable degree. In the same year Congress authorized the appointment of a Mississippi River

## Mississippi Scheme

Commission, but it was not until 1892 that expenditure upon the levees became a settled policy.

**Mississippi Scheme**, a bubble scheme projected by John Law in Paris in 1717. Part of the scheme was for the colonization and development of the Mississippi valley, but combined with this there was a banking scheme and a scheme for the management of the National debt, the whole thing supported by the French government. Such were the hopes raised by this undertaking that the shares originally issued at 500 livres were sold at 10, 20, 30, and even 40 times their value. People came from all parts of France, and even from foreign countries, in order to invest in the company. The State took advantage of the popular frenzy to issue increased quantities of paper money, which was readily accepted by the public creditors and invested in shares of Law's company. This went on till the value of the paper money became depreciated in value and the shares fell in price. When Law, the originator of the bankrupt company, fled from France in 1720 the State acknowledged itself debtor to the shareholders to the extent of \$340,000,000.

**Missouri**, a State in the South Central Division of the North American Union; admitted to the Union, Aug. 10, 1821; number of counties, 115; area, 69,420 square miles; pop. (1920) 3,404,055; (1928 Est.) 3,523,000.

Though the surface of the State presents no considerable elevations, it is greatly diversified. In the S. W. part are the Ozark Mountains, a series of isolated knobs, and cliffs of sandstone, some reaching an altitude of 1,500 feet. The Mississippi river is bordered by highlands in the shape of limestone bluffs, in some cases reaching a height of 350 feet. W. of these highlands the State is high and broken, becoming more and more level till the Osage river is reached. The principal rivers are the Mississippi, having a course of 470 miles along the E. boundary, the Missouri, which forms 200 miles of the W. boundary, and turning E. crosses the State, and flows 250 miles to the Mississippi. The Osage, St. Francis, Black, White, Gasconade, Current, Grand, and Charlton are all navigable at high water.

## Missouri

Missouri has numerous valuable mineral resources. Gold is found in the drift sands of the N., and silver, lead, and iron ores are scattered over the entire State. The coal is of various varieties from a common bituminous to a fine cannel, and is much used for smelting purposes, and for firing boilers. The coal measures cover over 26,000 square miles. The building stones include granite, sandstone, and limestone. The most productive of recent years was 1928, when the total mineral output had a value of \$74,981,000, distributed as follows: zinc, \$12,974,000; lead, 192,789 short tons; cement, 7,881,000 bbls.; clay products, over \$5,000,000. Missouri ranked all other States in the production of lead.

In 1925 it was estimated that there were 260,473 farms, comprising 32,641,893 acres, with a total value of \$2,286,693,415. The total value of 67 farm products (1929) was \$252,700,000 for farm, fruit and garden products, with corn, \$108,811,000, hay, \$55,324,000, wheat, \$19,546,000, potatoes, \$8,262,000. Livestock on Jan. 1, 1930, was as follows: horses, 563,000; mules, 300,000; cows, 860,000; other cattle, 2,172,000; swine, 3,810,000; sheep, 94,000. Missouri is famous as a mule breeding State.

The soil is generally fertile, excepting on the hills, where it is mixed with such a proportion of iron oxides as to make it unproductive. The alluvial deposits of the Mississippi and Missouri are exceedingly fertile, and the swamps, when drained, yield enormous crops. The prairies produce tobacco and wheat of the best quality. Only about one-third of the State is cultivated, the remainder being to a large extent densely timbered. The principal forest trees are the elm, ash, oak, sugar maple, hackberry, dogwood, sassafras, sweet gum, black gum, calapa, tupelo, pawpaw, and pecan. Yellow pine grows abundantly around the head waters of the Black, White, and Current rivers, and extensive pine forests extend along the Arkansas border.

Missouri ranks third among the United States in her agricultural wealth. The principal farm crops are corn, wheat, oats, potatoes, hay, rye, and buckwheat. Other important crops are peas, clover, flax, hemp, garden fruits, and barley. Agricultural

## Missouri

and creamery products are all developed to a high standard.

In 1929 there were 1,325 banks in the State with total resources of \$1,487,106,000, time deposits, \$392,268,000, demand deposits, \$699,800,000; deposits in savings banks and trust companies amounted to \$3,825,000,000.

In 1929 there were 4,500 acres of land given to the cultivation of tobacco, producing 4,050,000 pounds valued at \$1,012,000. In the South Eastern part of the State cotton is grown and there was an output of 220,000 bales with a value of \$18,370,000.

In 1928 the public school enrollment was 679,597; private and parochial school enrollment, 70,029. For higher education there were 766 public schools with 112,382 pupils and 4,779 teachers. There were also 74 private high schools and academies with 8,529 pupils and 52 colleges and universities with 25,573 students. There were \$52,795,000 expended for construction and maintenance of public elementary and secondary schools.

In 1928 there were 7,954 miles of steam and over 1,000 miles of electric railroads in the State, the former representing seventeen great systems.

In 1927 the total revenue for the State was estimated at \$42,521,706 and the net debt, \$69,958,464. The total assessed value of property was \$4,967,319,670.

In 1927 there were 5,422 manufacturing plants employing 195,378 persons earning \$230,017,000 and producing goods valued at \$1,665,173,000.

The governor is elected for a term of four years, and receives a salary of \$5,000 per annum. Legislative sessions are biennial; limit, 70 days. The Legislature in 1917 had 34 members in the Senate and 142 in the House, salary of each, \$5 per day. There were 16 Representatives in Congress.

Missouri was first visited by the whites, under De Soto in 1541, and under Marquette in 1673. In the early part of the 18th century a brisk trade in furs between the French and the Indians led to French settlement, St. Louis, St. Genevieve, and other towns were founded about the middle of the century, but in 1762, after the conquest of New France by the English, this country was transferred to Spain. It was restored to France in 1800, and purchased by the United States in 1803, as part of

## Mistassini Lake

the Louisiana Purchase. In 1812, a portion of Louisiana was set aside as the Territory of Missouri, and in 1821 it was admitted into the Union as a State. The question of its admission gave rise to a long and bitter political controversy in Congress, the South wishing to make it a slave State and the North resisting. The dispute was at length settled by a compromise to the effect that slavery should be permitted in Missouri, but excluded from all other parts of the Louisiana Purchase N. of lat. 36° 30'. In 1836 Missouri was reduced from its Territorial to its present State limits. On the outbreak of the Civil War the people of Missouri were divided in sentiment, and both sides took up arms. Many conflicts took place in the State, but the activity of the Union party saved it from secession. After the war the State entered upon a career of unprecedented prosperity.

**Missouri, University of**, a co-educational and non-sectarian institution in Columbia, Mo.; founded in 1840.

**Missouri**, a river of the United States; formed in the Rocky Mountains, in Montana, winds circuitously along the base of the mountains, then E. till it reaches the W. boundary of North Dakota and receives the Yellowstone. Here it begins to flow S. E. through North and South Dakota, then forms the E. boundary of Nebraska, separates for a short distance Kansas from Missouri, then strikes E. across the latter State, and joins the Mississippi after a course of 2,908 miles. It is navigable 2,500 miles from the Mississippi, giving a water-route for commerce into the remote Northwestern States.

**Missouri Compromise**, a term given to a compromise under an act of Congress passed in February, 1821, declaring that all territory W. of Missouri and N. of lat. 36° 30' (the S. boundary of Missouri) should forever be free from slavery.

**Mistassini Lake**, a sheet of water in Canada; length, about 125 miles; average width, 20 miles; it forms the headwaters of the Rupert river. Up to 1885 it had never been thoroughly explored but in that year an expedition visited its shores, and proved

that it somewhat exceeded in extent the area previously assigned to it.

**Mistletoe**, a plant parasitic on the apple and other fruit trees, on the thorn, the oak, the poplar, the lime, the ash, etc. It sometimes kills the branch or even the tree on which it is a parasite. Found in the United States, also in Europe, and the N. of Asia. It was deemed sacred by the Druids, and still finds a large market in the United States and England when preparation is being made for Christmas festivities and sports. Bird



**MISTLETOE.**

lime is made from the berries. Kissing under the mistletoe, Scandinavian mythology: The wicked spirit, Loki, hated Balder, the favorite of the gods, and, making an arrow of mistletoe, gave it to Hader, the god of darkness and himself blind, to test. He shot the arrow and killed Balder, who was restored to life, and the mistletoe given to the goddess of love to keep, every one passing under it receiving a kiss as a proof that it was an emblem of love, and not of death.

**Mistral, Frederic**, a Provencal poet; born a peasant's son, near Mail-

laune, Bouches-du-Rhone, France, Sept. 8, 1830. He studied law, but went home to work and write poetry. In 1859 he published the epic "Mireio." This representation of life in Southern France made his name famous. He died March 25, 1914.

**Mistress of the World**, a title anciently given to Rome.

**Mitau**, the capital of the Latvian province of Courland, on the right bank of the Aa, 27 miles S. W. of Riga; has a castle, the seat of the governor of the province, six churches, a museum, etc., with important manufactures, and a trade in grain and timber; founded in 1271; annexed to Russia in 1795. Pop. (1926 Est.) 28,321.

**Mitchel, John**, an Irish patriot; born the son of a Presbyterian minister, in Dungiven, County Derry, Ireland, Nov. 3, 1815. He studied at Trinity College, Dublin, and practised as an attorney. Soon after the formation of the Young Ireland party, and the starting of the "Nation," in 1842, Mitchel began to contribute, and after 1845 he became assistant editor. His language was too violent for the paper, and three years later he started the "United Irishman," for his articles in which he was tried on a charge of "treason-felony" and sentenced to 14 years' transportation. He made his escape to the United States in the summer of 1853. In 1874 he returned unmolested to Ireland, and was elected to Parliament for Tipperary, but declared ineligible. He died in Cork, March 20, 1875.

**Mitchel, John Purroy**, an American statesman; born in New York City, July 19, 1879; became Assistant Corporation Counsel in 1906; investigated various city departments; elected President of the Board of Aldermen; appointed Collector of the Port of New York in 1913; as Fusion candidate for Mayor of New York City defeated his Democratic opponent by a large plurality in 1913; and was himself defeated in 1917. Died, 1918.

**Mitchel, Ormsby Macknight**, an American astronomer and soldier; born in Morganfield co., Ky., July 28, 1809. He was graduated at the United States Naval Academy in 1829; became Professor of Mathematics and Astronomy at Cincinnati



**Mitchell**

College, O., in 1834, and was largely instrumental in building and equipping the observatory there; and was director of the Dudley Observatory, Albany, N. Y., 1859. He was made Brigadier-General in the Federal service; won the battle of Huntsville, Ala., April, 1862; was promoted to Major-General and Commander of the Department of the South. He died in Beaufort, S. C., of yellow fever, Oct. 30, 1862.

**Mitchell, Donald Grant**, pseudonym Ik Marvel, an American author; born in Norwich, Conn., in April, 1822; was graduated at Yale in 1841; traveled in Europe; studied law in New York; in 1850 he published "The Reveries of a Bachelor," and in 1851 his "Dream Life." In 1853 he became United States consul at Venice, and afterward wrote many popular books. He died Dec. 15, 1908.

**Mitchell, Elisha**, an American chemist; born in Washington, Litchfield co., Conn., Aug. 19, 1793. He was graduated at Yale in 1813; in 1818 became Professor of Mathematics in the University of North Carolina; and in 1825 of chemistry; in 1821 was ordained a Presbyterian minister; and was for some time State surveyor. He first ascertained that the mountains of North Carolina are the highest E. of the Rocky mountains. To settle some disputed points in regard to these heights, he reascended them in 1857, lost his way at night, fell down a precipice, and was killed June 27.

**Mitchell, John**, an American labor executive; born in Braidwood, Ill., Feb. 4, 1869; received a common school education; later studied law; worked in coal mines in 1882; joined the Knights of Labor in 1885, and went West, where he worked in coal mines till 1890; became secretary-treasurer of the sub-district of the United Mine Workers of America in 1895; President of the United Mine Workers of America in 1898; directed the strikes of the anthracite coal workers in 1900 and 1902; member of the New York State Workmen's Compensation Commission in 1914-15; became chairman of the New York State Industrial Commission in 1915. D. 1919.

**Mitchell, John Ames**, an American journalist; born in New York

**Mitchell**

city, Jan. 17, 1845; studied at Lawrence Scientific School; studied architecture in Boston, Mass., and Paris; practised as an architect in Boston; afterward engaged in artistic and decorative work; was then in New York as artist, illustrator, and writer; founded Jan. 3, 1883, "Life," of which he was editor. Died, 1918.

**Mitchell, Maria**, an American astronomer, daughter of William Mitchell; born in Nantucket, Mass., Aug. 1, 1818. She inherited her father's love of astronomy, which she made her life-work. She discovered a considerable number of nebulae and a comet (in 1847). In 1858 she visited the principal observatories of Great Britain and the Continent. In 1865 she was appointed Professor of Astronomy and Director of the Observatory of Vassar College, a position which she held till 1888. She died in Lynn, Mass., June 28, 1889.

**Mitchell, Silas Weir**, a distinguished American physician, poet, and novelist; born in Philadelphia, Pa., Feb. 15, 1829; studied at the University of Pennsylvania; was graduated at Jefferson Medical College (1850); became prominent as a physiologist, especially as a neurologist and toxicologist. He died Jan. 4, 1914.

**Mitchell, Walter**, an American clergyman, editor and author; born in Nantucket, Mass., Jan. 22, 1826; was graduated at Harvard University; admitted to the bar; became priest in the P. E. Church; was rector of a number of parishes; chaplain of Kenyon College, and connected with the "Churchman," New York. D. 1908.

**Mitchell, William**, an American astronomer; born in Nantucket, Mass., Dec. 20, 1791. As a young man he struggled for several years; then became bank cashier in Nantucket; made systematic astronomical determinations in connection with the United States Coast Survey; was made A. M. by Brown University in 1848, by Harvard in 1860, being overseer of the latter university and chairman of the committee to visit the observatory in Cambridge. Astronomy and mathematics furnished pastimes of his busy life. He died in Poughkeepsie, N. Y., April 19, 1868.

**Mitchell, William**, an American ex-army officer born of American par-

## Miter

ents in Nice, France Dec. 29, 1879. He was the first American officer to fly over the lines in 1914. He was in command of the Air Units of the 1st Army and later was chief of the Air Service of armies in the Argonne defensive.

He was appointed Brig. Gen. assistant to chief of the Air Service in July 1920, and reverted to rank of colonel at the end of 4 years at Washington on criticism of the War and Navy Depts. for alleged dismanagement of aviation service, tried by court martial and sentenced to suspension for 5 years and forfeiture of all pay and allowances. Pres. Coolidge modified it to half pay.

**Miter**, or **Mitre**, in ordinary language, a form of head-dress worn by the inhabitants of Asia Minor; a head-band. In religion, the head-dress of a bishop. The episcopal miter was doubtless suggested by that of the Jewish high priest.

**Mithras**, the sun-god of the Persians, to which they paid adoration as the purest emblem of the divine essence. The worship of Mithras was introduced into Rome, seemingly not long after the fall of the republic, and soon spread over all parts of the empire.

**Mithridates**, surnamed Eupator, and The Great, King of Pontus, and the 16th of the name; born about 131 B. C. He succeeded his father, 120 B. C., and his first acts were the murder of his mother and his brother. He then began his career of conquest by making himself master of Colchis and the Tauric Chersonese. The kingdoms of Bosphorus, Cappadocia and Bithynia were successively added to his dominions. Friend and ally, as he professed to be, of the Romans, he obeyed the decree of the Senate, to restore the two last-named countries to their lawful sovereigns. But in 88 he again expelled those kings, and did not shrink from a war with the Romans; took Phrygia and Galatia, almost all Asia Minor, and occupied Thrace and Athens. All hope of reconciliation with Rome was taken away by the massacre, which he is said to have ordered, of all the Romans found in Asia. Eighty thousand are said to have been slain. He was defeated, first by Sulla, and afterward by Pompey. His spirit was still unbroken,

## Moabites

and he formed the bold plan of invading Italy, but eventually his son Pharnaces was proclaimed king by the soldiers. At his own request he was killed by a faithful Gaul, 63 B. C.

**Mitrovica**, a Hungarian town of Croatia-Slavonia, on the Save river, 2 miles from the Servian border, 38 miles N. W. of Belgrade; occupies the site of Sirmium, the chief city of Lower Pannonia under Roman rule; was sacked by the Huns in 441, and by the Turks, who destroyed all its ancient buildings, in 1396 and 1521. Pop. about 13,000.

**Mittimus**, in law, a precept or command in writing given by a justice of the peace, or other officer, directed to the keeper of a prison, requiring him to receive and hold an offender charged with crime till he be delivered by due course of law; a warrant of commitment to prison.

**Mitylene**, or **Mytilene**, an island of the Grecian Archipelago, belonging to Turkey, 7 miles from the coast of Asia Minor; area, 276 square miles; pop. about 40,000. In consequence of strained relations between France and Turkey, a French fleet was sent to Mitylene, Nov. 5, 1901; and remained there till the Porte agreed in full to the demands made.

**MIŁAWA**, a town of Russian Poland, 6 miles from the East Prussian border 47 miles N. W. of Warsaw; on the Danzig-Warsaw railroad; is the last station of importance N. of Warsaw inside the border; has extensive manufacturing of cloth and leather goods. Pop. about 12,000.

**Moa**. See **DINORNIS**.

**Moabites**, a pastoral people who inhabited the bleak and mountainous country E. of the lower part of the Jordan and of the Dead Sea, divided into two portions by the deep bed of the Arnon. Their capitals were Ar-Moab and Kir-Moab, both S. of the Arnon, but their kings often resided in their native places, as Mesha in Dibon. Their sovereign divinity was Chemosh, and patriotism was an essential part of their religion. They were compelled to become tributary to David, but about 850 B. C. shook off their allegiance to the Jewish kings, and afterward took part with the Chaldeans against

the Jews. Their name no longer exists, and the remnants of the people have long been included among the Arabs.

**Moabite Stone**, a stone bearing an inscription of 34 lines in Hebrew-Phœnician letters, discovered in 1868 among the ruins of Dhiban. The stone was of black basalt, rounded at the top and bottom, 2 feet broad, 3 feet 10 inches high, and 14½ inches in thickness, but was broken up by the Arabs. The fragments were afterward fitted together, and the monument now stands in the Louvre at Paris. The inscription is a record of Mesha, King of Moab, mentioned in II Kings, iii., referring to his successful revolt against the King of Israel.

**Mobile**, city, port of entry, and capital of Mobile county, Ala.; on the Mobile river near bay of same name and on several railroads; 25 miles from the Gulf of Mexico; is the most important city in the State and among the foremost in the South; built near the site of Fort St. Louis de la Mobile, erected in 1702. Mobile is noted for its many and diversified industries, its large commerce, and its stirring part in the Civil War. It contains a Federal Building, Federal Marine and City hospitals, Cathedral of the Immaculate Conception (R. C.), Odd Fellows' and Temperance halls, St. Joseph's and Spring Hill colleges, McGill and Evangelical Lutheran institutes, Alabama Medical College, and Convent and Academy of the Visitation. Pop. (1930) 68,202.

**Mobile Bay, Battle of**, one of the most important and decisive battles of the Civil War, fought at Mobile Bay, Aug. 5, 1864, between the Union fleet, commanded by Admiral Farragut, and the Confederate ram "Tennessee" and three iron-clads commanded by Admiral Buchanan. The conflict raged all day and was renewed after dark, and fighting was continued till 10 A. M. the next day, when being badly crippled, the "Tennessee" struck her colors. It was during this battle that Admiral Farragut was lashed to the mast of his ship and from there directed the movements of his vessel.

**Mocking Bird**, a bird of the thrush family. The plumage is not

at all brilliant, but what this bird lacks in beauty of plumage is fully compensated for by its amazing facility of voice and song. It inhabits North America chiefly, being a constant resident of the Southern States, and but rare and migratory in the N. parts of the continent. It is also found in the West Indian Islands and in Brazil. The ordinary song notes of the mocking birds are clear, bold, and varied. They sing during the night, like the nightingales, and appear to begin their song with the rising moon. The imitative notes of these birds are, however, still more varied than their natural tones. They mimic with success the songs of their feathered neighbors and with such exactitude as to deceive the ear of the most experienced sportsman. When they are kept in confinement all the sounds of the household are imitated. The ferruginous mocking bird is another familiar species, familiarly known in North America as the brown thrush or thrasher. It does not appear to equal its more celebrated neighbor in the powers of its song.

**Modena** (ancient Mutina), capital of the former duchy of Modena; on a broad plain in Northern Italy, 23 miles N. W. of Bologna. Originally an Etruscan town, Modena was conquered successively by the Gauls and the Romans, and destroyed by Constantine the Great, the Goths, and the Longobards. Charlemagne made it the capital of a line of counts. The family of Este became its masters in 1288; and in 1452 the reigning marquis was created duke by the Emperor Frederick III. The duchy was incorporated in the kingdom of Italy. Area of province, 1,003 square miles; pop. (1925 Est.) 395,513; pop. city, 83,426.

**Moderator**. In Presbyterianism; One who presides over a called or regular assembly, large or small. Also the presiding officer of a New England town meeting.

**Modjeska, Helena**, a Polish actress; born in Cracow, Poland, Oct. 12, 1844. After becoming a star in Cracow, she settled in California with her second husband, but through financial reverses returned to the stage, and soon acquired a reputation as one of the best of modern emotional actresses. Died April 8, 1909.



**Modocs**, an Indian tribe of Northern California, originally settled on Klamath Lake (q. v.). In 1872, after firing on the United States forces, they retreated to the neighboring lavabeds, and there defended themselves desperately till June, 1873. Their chief, Captain Jack, and three others were hanged in October; about 100 who had not followed him were permitted to remain in California, the rest (145) were transferred to Indian Territory.

**Modulation**, in music, the transition from one key to another. The simplest form is the change from a given key to one nearly related to it, namely, its fifth (dominant), fourth (subdominant), its relative minor, or the relative minor of its fifth.

**Moeso-Goths**, the name given to the Goths, who in the 3d century and in the 5th settled in Lower Mesia. It was for them that Ulfilas translated the Scriptures.

**Moffat, James Clement**, an American writer; born in Glencree, Galloway, Scotland, May 30, 1811. He contributed numerous articles to periodicals, and published "Life of Dr. Thomas Chalmers." He died in Princeton, N. J., June 7, 1890.

**Moffat, Robert**, a Scotch missionary; born in Ormiston, East Lothian, Scotland, Dec. 21, 1795. He began missionary work in South Africa in 1813, and in 1818 made a long exploratory tour in the Damara country. In 1819 he married Mary Smith at Cape Town, who henceforth was the constant companion of his labors. He published an account of his travels, and a translation of the New Testament and Psalms in the Bechuana language. He finally returned to England in 1870, and his wife died the following year. One of his daughters became the wife of Dr. Livingstone. He died in Leigh, Aug. 8, 1883.

**Mogul**. The term "great Mogul" is the popular designation of the emperor of Delhi in India. The first Great Mogul was Baber, a descendant of Timur the Tartar or Tamerlane. He founded the empire in 1526. The dynasty lost its power and territories to the English in 1765. The last emperor, having joined the rebels in 1857, died a prisoner in Rangoon (1862).

**Mohair**, the hair of the Angora goat. Also a fabric made from the fine, white, silky hair of the Angora goat and allied species; sometimes called camlet. Also a wool and cotton fabric made in imitation of the above, in mixed colors or plain.

**Mohammed**, or **Mahomet**, the Arabian prophet, and the founder of Islam; born in Mecca, Arabia, A. D. 570 or 571. He was the only son of Abdallah and Amina; his father being of the family of Hashem, princes of Mecca, and the guardians of the Caaba. Left an orphan in infancy, he was brought up by his uncle, Abu Taleb, who trained him to commerce, and took him to the great fairs of Arabia and Syria. When 25 years of age Mohammed married Khadija, a rich and noble widow of Mecca, and the following 15 years of his life were passed in domestic quietness. He began, at 40 years of age, to announce himself as an apostle, and to proclaim the doctrine of Islam (salvation), that "There is no God but Allah, and Mohammed is his Prophet." His wife Khadija was one of the first to believe him, and among other members of his family who readily acknowledged his mission was his cousin, Ali, son of Abu Taleb. After three years, he made a more public announcement of his doctrine, especially insisting on the unity of God, and denouncing all kinds of idolatry; but his followers were very few for years, and the opposition of the elders and people of Mecca growing more and more bitter and violent, some of his disciples retired into Ethiopia. In A. D. 621 Mohammed lost his faithful and beloved Khadija, who during the 24 years of their marriage had retained his love. The death of Abu Taleb took place about the same time; and soon after, the Korishites, headed by Abu Sophian, resolved to put the prophet to death.

He fled from Mecca, hid himself in a cave for three days, and then, with his only companion, Abubekr, withdrew to Medina. From this flight of Mohammed commences the era of the "Hegira" (July 16, 622). He made a public entry into Yatreb amid the loudest welcomes of the citizens, and at once assumed the offices of king and priest. He also there married his second wife, Ayesha, daughter of Abu-

## Mohammed

bekr, who long survived him. He had many other wives, all widows, except Ayesha. Persuasion, long tried with little success, at length gave place to force and war, and in the battle of Beder—first of the long series of battles by which the faith of Islam was established—he defeated Abu Sophian and the Koreish (A. D. 623). He was defeated by them in A. D. 625; they unsuccessfully besieged Medina, and a truce for 10 years was agreed on. In 630 the conquering prophet marched to Mecca, received the keys of the city, and was acknowledged as prince and prophet. He showed no malice against his former enemies, performing the pilgrimage with the customary observances, purified the Caaba, destroyed its 360 idols, and decreed that no infidel should enter the holy city. The whole of Arabia was soon after conquered, and ambassadors with arrogant claims were sent to the Emperor Heraclius, the King of Persia, and the King of Abyssinia. War with the Roman empire was begun; an expedition for the conquest of Syria was prepared; when Mohammed, believed to be immortal by some of his disciples, fell into a fever, and after 14 days of suffering, died in Medina, Arabia, June 7, 632. He was buried in a simple tomb.

**Mohammed**, the name of four emperors of the Turks, of whom Mohammed I. (1374) was a warlike son of the famous Bajazet. Mohammed II. (1451) was the conqueror of Constantinople, Mohammed III. (1595) an unimportant ruler, and Mohammed IV. (1649) a man given to hunting, but with an able and warlike grand vizier who invaded Poland and Austria and in 1683 laid siege to Vienna. The siege was raised by the Polish leader, John Sobieski, who marched to the relief of the city and routed the Turkish army. The Janizaries, incensed at the indolence of the Sultan, deposed and imprisoned him in 1687. A fifth sultan of the name, Mehemmed (Mohammed) Reschad Effendi, was raised to the throne on the deposition of Abdul-Hamid II. on April 27, 1909. Not wishing to assume the name of the great Mohammed, he took the title of Mehmed V.

**Mohammed Ahmed**, a fanatical leader of the Mahdists, of whom men-

## Mohave Desert

tion is made under Mahdi. He made his appearance in the Sudan in 1878, dressed as a dervish, and traveled about preaching to the Arabs and blacks. His followers rapidly increased in numbers and soon he announced himself as the Mahdi, or spokesman of God on earth. The Egyptian government requested him to come for an interview, which he refused to do and an armed force was sent to bring him. The company of soldiers was ambushed and massacred. Not long after this he threw off all pretense and set out on the series of raids which made him ruler of the Sudan. In this crisis England sent General Gordon to subdue the country by peaceable means. He reached Khartum in 1884 and the city was soon after besieged by the Mahdi's army. Two days before a rescuing expedition reached Khartum it fell through treachery, and Gordon was killed Jan. 26, 1885. The Mahdi died in the same year.

**Mohammed-Ali-Mirza**, Shah of Persia, son of Muzafer-ed-Din (q. v.), born June 21, 1872. He was well educated in Western ideas and languages, became Governor of Azerbaijan, regent during his father's illness, and on his death Jan. 8, 1907, succeeded to the throne. Although of liberal ideas and favoring reforms, his proposed revision of the new constitution in Dec., 1906, evoked adverse criticism.

**Mohammedanism, Mahometanism, or Muhammadanism**, the religion founded by Mohammed. The Mohammedans of the world have been estimated at 250,000,000, of whom 50,000,000 are in India, 40,000,000 directly under British rule, and 10,000,000 in allied or tributary states. The Koran is their sacred book and their code of law. Their faith is called Islam (surrender of the will to God). Five duties are incumbent on the faithful Mohammedan: A confession of faith that there is but one God, and that Mohammed is his prophet, prayer, fasting, almsgiving, and a pilgrimage to Mecca. Friday is their Sabbath.

**Mohave Desert**, a basin, with little water or vegetation, chiefly S. E. of California, and extending into Arizona. The Mohave river rises in the San Bernard range, and finally disappears in the Mohave Sink.

**Mohawk**, a river in New York, the principal tributary of the Hudson; length about 135 miles. It affords abundant water power.

**Mohawks**, a tribe of North American Indians, belonging to the confederacy of the Five Nations. They originally inhabited the valley of the Mohawk river. With the rest of the confederacy they adhered to the British interests during the Revolutionary War, and left the country on its termination for Canada, where lands were assigned them on the Grand river. Their language has been committed to writing.

**Mohegan**, or **Monhegan Indians**, a tribe of North American Indians who formerly lived on the Thames river in Connecticut. They were at one time united with the Pequots and after the death of Sassacus, Pequot leader, the remainder of the tribe came under the Mohegan chief. After the death of King Philip in 1676, the Mohegan tribe was the only important one in that region. Save for a few descendants of mixed blood they have long disappeared.

**Mohurram**, the first month of the Mohammedan year. Also one of the greatest of the Mohammedan festivals, held in commemoration of the so-called martyrdom of Hassan and Hosein, sons of Ali, and nephews of Mohammed, which occurred in the 46th year of the Hegira.

**Moldore**, a Portuguese gold coin, worth 4,000 reis, or about \$5.31.

**Molay, Jacques de**, the last grandmaster of the Knights Templars; born in Burgundy. He was admitted into the order about 1265, and having signalized himself by his valor in Palestine, was unanimously elected grand master on the death of William de Beaujeu. Philippe le Bel, King of France, and Pope Clement V., formed a plan for their extermination. They were accused of heresy, impiety, and various crimes. In October, 1307, all the Templars throughout France were arrested at the same hour, and they were tried and convicted. Fifty-seven were committed to the flames in 1311; and after an imprisonment of seven years, De Molay shared their fate at Paris, March 18, 1314, declaring the innocence of his order to the last.

**Mold**, or **Mould**, any thread-like fungus, found on bread, ink, gum, etc. Vegetable soil consisting of the surface stratum, whether of clay, gravel, sand, or rock, disintegrated by atmospheric influence and modified by the plants, first of lower, and then of higher organization, and by the animals which reside upon or pass over its surface. Of these animals the most potent in action is the earth-worm.

**Moldavia**. See RUMANIA.

**Mole**, a jetty or structure erected before a port so as to partially inclose a harbor or anchorage, and protect it from the violence of the waves in the offing. Also a pier of masonry.

**Mole**, a name loosely applied to any underground burrowing mammal. The common mole is about six inches in length. The normal food of the mole is the earthworm. It is voracious, and no kind of flesh seems to come amiss to it, but it will not touch vegetables. It takes readily to the water.

**Molech**, or **Moloch**, a heathen deity chiefly mentioned in the Old Testament as the national god of the Ammonites, to whom children were sacrificed by fire.

**Mole Cricket**, a genus of insects, common in the United States. In length the mole cricket averages about two inches. It is of a reddish brown color. The anterior pair of limbs are converted into powerful burrowing organs, somewhat similar to the hands of the mole, to which animal, in the general conformation of its body, this cricket bears a marked resemblance. These insects burrow in the ground and construct their nests in the form of subterranean galleries.

**Molecule**, the smallest quantity of any elementary substance or compound which is capable of existing in a separate form. It differs from atom, which is not perceived, but conceived, inasmuch as it is always a portion of some aggregate of atoms.

**Mole Rat**, a mouse-like rodent, found in the S. E. of Europe, ranging E. into Asia. The eyes are rudimentary and covered with skin, so that the animal is quite blind; the tail is also rudimentary. The toes are furnished with powerful claws, which the animals use in excavating their bur-

rows. Color, yellowish-brown, tinged with ashy-gray, the lower surface with white streaks and spots.

**Molesworth, Sir William**, an English politician, popularly known as the "liberator and regenerator of Britain's colonial empire"; born in London, England, May 23, 1810; he succeeded as 8th baronet in 1823. He will chiefly be remembered as having drawn attention to the abuses connected with the transportation of criminals, and as having pointed out the maladministration of affairs in the colonial office, investigated the relations between the imperial government and the colonial dependencies, and expounded the true principles of colonial self-government. He died in London, Oct. 22, 1855.

**Moliere**, the professional name of **Jean Baptiste Poquelin**, a French dramatist; born in Paris, France, Jan. 15, 1622. He is called by Voltaire the Father of French Comedy. Died 1673.

**Moline**, a city in Rock Island county, Ill.; on the Mississippi river and several railroads; 178 miles W. of Chicago; is the seat of the Western Illinois Hospital for the Insane; and is chiefly engaged in the manufacture of farm implements, gasoline engines, pumps, pianos and organs, and mantels. Pop. (1930) 32,236.

**Molinos, Miguel**, founder of the Quietists; born near Saragossa, Spain, Dec. 21, 1640. He was a priest at Rome. His principal work, "A Spiritual Guide" (1675), maintained that godliness consists in uninterrupted communion with God through contemplation—the doctrine called "Quietism." This being thought to imperil the doctrine of good actions, the book was condemned (1687); and in spite of recanting, he was imprisoned for life, dying in confinement, in Rome, Dec. 29, 1696, or 1697.

**Mollah**, or **Mullah**, an honorary title given to any Mohammedan who has acquired consideration by the purity of his life, or who holds some post relating to worship or the application of the principles of the Koran.

**Mollusca**, in zoölogy, a miscellaneous assemblage of genera described as naked, not included in a shell, furnished with limbs. Cuvier made the Mollusca one of the four

great "divisions" or sub-kingdoms of the Animal Kingdom, of equal rank with the Vertebrata, the Articulata, and the Radiata. Example, the cuttle fish, the snail, the oyster, etc. Many thousand recent Mollusca are known, distributed throughout every climate and nearly every part of the world.

The shells of the Mollusca being all but indestructible, and easy of identification, afford us a reliable means for ascertaining the relative age of strata. Next to the Protozoa, the oldest fossils known are Mollusca. They have abounded from Cambrian times till now. The longevity of molluscan species (not individuals) is much greater than that of the Mamamalia.

**Molly Maguires**, a secret society formed in Ireland, in 1843, to intimidate bailiffs or process-servers distraining for rent, or others impounding the cattle of those who were unable or unwilling to pay rent. The members of the association were young men dressed up in female attire, and having their faces blackened. Also, a similar society formed in 1877 in the mining districts of Pennsylvania. The members sought to effect their purpose by intimidation, carried in some cases to murder. Several were arrested, tried and executed, chiefly through the evidence of a detective, who joined their order, and gained a knowledge of its secrets and its crimes.

**Moloch Lizard**, a genus of lizards found in Australia. It is one of the most ferocious-looking, though at the same time one of the most harmless of reptiles, the horns on the head and the numerous spines on the body giving it a most formidable and exceedingly repulsive appearance.

**Molokai**, an island of Hawaii, 40 miles long by from 7 to 9 broad. Noted for its settlement of lepers, all persons on the islands found to be affected being sent by government to Molokai, and kept entirely isolated from the healthy part of the community. Pop., with Lanai, Maui and Kahoolawa, (1926 Est.) 34,270.

**Moltke, Helmuth Karl Bernhard**, Count von, a Prussian military officer, one of the greatest soldiers of Europe; born in Paschim, Mecklenburg-Schwerin, Oct. 26, 1800. He was the son of a German officer. The unusual character of Von Moltke's

genius did not appear till Prince William ascended the Prussian throne as regent in 1858. Bismarck became prime minister, Von Roon was made secretary of war, and Von Moltke was appointed chief of staff. These men cooperated successfully in the reorganization of the armed forces of the kingdom, and perfected the weapon by which Prussia fought her way to the first place in Europe. Von Moltke planned the Danish campaign of 1864, and two years later immortalized himself by the result of the war with Austria. He keenly foresaw the war with France (1870-1871), and perfected his plan of campaign two years in advance of the outbreak of hostilities. War was declared by France, July 19, 1870, and seven days later three divisions of the Prussian army were on the frontier. By the middle of August Bazaine, with 180,000 Frenchmen, had been penned up in Metz, and on Sept. 1 Napoleon and Marshal MacMahon were entrapped at Sedan and obliged to surrender with 90,000 men. On Sept. 19 the Germans were before the walls of Paris. The Franco-Prussian War established the reputation of Von Moltke as the ablest strategist of his time. His own country showered honors on him, he becoming a count, a marshal, and a life-member of the Prussian House of Lords. In Parliament his only speeches were on military affairs, and he spoke so seldom that he was called "the silent one." It was a common saying in regard to his linguistic talents that "Von Moltke was silent in eight languages." He was retired for age in 1888, and died in Berlin, Prussia, April 24, 1891.

**Moluccas, or Spice Islands**, a name applied to the widely scattered group of islands lying between Celebes and Papua, between lat. 3° S. and 6° N., and lon. 126° to 135° E.; area, 195,653 square miles; pop. (1921) Est. 450,000 approximately. They are divided into the residences of Amboyna, Banda, Ternate, and Menado; the S. portion being governed directly by the Dutch, and the N. indirectly through native sultans. The islands (several hundred in number) are nearly all mountainous, mostly volcanic, and earthquakes are by no means uncommon. Cloves, nutmegs, mace, and sago

are exported to Europe; and birds'-nests, trepang, etc., to China. The natives belong to Malay and Polynesian races, and the general language on the coast is the Malay.

**Mommsen, Theodor**, a German historian; born in Garding, Schleswig, Nov. 30, 1817. He was Professor of ancient history at Berlin, 1868; member of the Prussian House of Delegates. His great work is "Roman History." He wrote besides, "Roman Chronology down to Caesar"; "History of Roman Courage." He was editor-in-chief of the great "Body of Latin Inscriptions" (15 vols. and supplement, 1863-1893). His historical work incorporates the results of vast learning in widely severed fields. In 1883 he was acquitted on the charge of slandering Bismarck. Died 1903.

**Momus**, the god of mockery and censure among the ancients. He was the son of Night and was expelled from heaven for his free criticism of the gods. Momus is generally represented raising a mask from his face and holding a small figure in his hand.

**Mona**, a monkey from Senegal. It is remarkable for its brilliant coloration; the head being olive-yellow, with a black stripe on the forehead; yellowish whiskers and a purple face. The back is chestnut-brown, and there is a white spot on each side near the root of the tail, which is black.

**Mona**, a small island of the West Indies, 42 miles E. of Porto Rico, in the middle of Mona Passage, to which it gives its name; area, nearly 10,000 acres. It is a coral formation. Mona came into the possession of the United States under the peace treaty with Spain in 1898. The only resident on the island is a lighthouse keeper.

**Monachism**, the system of monastic life; monkery, monkishness.

The most gigantic development of monachism the world has ever seen is that of Buddhism, and it was the earliest in point of date. The Jain system is also monastic. Brahmanism possesses it to a less, but still to a considerable extent.

In the 2d century certain persons who aimed at stricter piety than their neighbors often held converse together without quite separating from society. They were called ascetics, and pre-



pared the way for the rise of monachism. They frequently resided in caves. In 305 Anthony, an Egyptian monk, collected many of the eremites into communities. These were called *cenobites*. In the early part of the 6th century St. Benedict introduced new regulations, and all the monastic orders for some centuries were Benedictine. Many ordinary monks becoming corrupt, the new Order of Canons was instituted in the 12th century, and, as the great wealth which their communities had acquired was believed to be one of the main causes of that corruption, there arose, in the beginning of the 13th century, different mendicant orders, the members of which vowed poverty. At first all the monks were laymen; now they consist of three classes: (1) Priests; (2) choir monks, in minor orders; and (3) lay-brothers, who act as servants and laborers. Originally they were under the jurisdiction of the bishop, but ultimately they were exempt from all authority except that of the Holy See. The influence of the mendicant orders was on the wane at the Reformation, and the Jesuits took their place. At that date many monasteries in England and elsewhere were deprived of their endowments and suppressed. Those of France were swept away in the first Revolution. Though since restored, they have not attained their former importance. The enforcement of the law against unauthorized religious associations has dealt a final blow to monachism in France, and many have come thence to England and the United States. It may be said that monachism is more securely established in North America than in any country of Western Europe, not even excepting Spain.

**Monaco**, a principality lying between the French department of Alpes-Maritimes (Nice) and the Mediterranean. In 1861 the Prince of Monaco sold the departments of Mentone and Rocca-bruna to France for \$800,000; and the principality has since been confined to an area of 8 square miles, with a pop. (1923) of 22,153. The prince formerly exercised both legislative and executive functions, but in 1911 a constitution was promulgated, which provided for a National Council. The revenue is largely derived from

the rents of the gaming establishment. The capital, Monaco, on a rocky height projecting into the sea, is a renowned watering-place. About a mile to the E. is Monte Carlo, a collection of hotels and villas which have sprung up near the luxurious gardens of the handsome gambling casino, established here in 1860. This institution is now the property of a joint stock company. The inhabitants of Monaco (Monegasques) are not admitted to the games.

**Monad**, in chemistry, univalent element. A name given to those elements which can directly unite with, or replace, one atom of hydrogen in a compound. The monad elements are hydrogen, chlorine, bromine, iodine, fluorine, lithium, sodium, potassium, ruthenium, caesium, and silver.

**Monadnock, Grand**, a mountain in Cheshire Co., New Hampshire, 3,186 feet high.

**Monarchy**, a state or government in which the supreme power is vested in the hands of a single ruler, and which is absolute, limited, or constitutional, hereditary, or elective. An empire; a kingdom; the state or country ruled by a monarch, absolute or constitutional.

**Monastery**, a class of structures which arose in the Middle Ages to meet the requirements of the large number of monks that then existed.

**Monastic Vows**, the solemn promises made to God by the monks. They are three in number: poverty, chastity, and obedience. The vow of poverty prevents the monks from holding any property individually. Monasteries, however, professing merely the "high" degree of poverty may possess real estate, yet not more than enough for their support, as the Carmelites and Augustines. In the "higher" degree a monastery may hold only personal property, as books, dresses, supplies of food and drink, rents, etc., as the Dominicans. The "highest" degree absolutely forbids both real and personal property, as is the case with the Franciscans, and especially the Capuchins. The vow of chastity requires an entire abstinence from familiar intercourse with the other sex; and that of obedience entire compliance with the rules of the order and the commands of the superior.

**Monastir**, a city in S. Servia, picturesquely situated in a broad mountain valley, 90 miles N. W. of Salonica. It has important manufactures and considerable trade. It was a strategic place in the Balkan wars, and was surrendered by the Turks to the Servians, Nov. 18, 1912. In the great World War it was taken by the Austro-Germans, Dec. 2, 1915, and from the Bulgarians and Germans by the Entente Allies Nov. 19, 1916. See APPENDIX: *World War*.

**Moncton**, town, port of entry, and capital of Westmoreland county, New Brunswick, Canada; on the Petico-diac river and the Intercolonial and other railways; 89 miles N. E. of St. John; has the general offices and repair shops of the Intercolonial Railway. Pop. (1930 Est.) 22,000.

**Monetary Convention.** There are two groups of European nations, between whose members an agreement has been entered into for the regulation of their coinage. They are called the "Latin Monetary Convention," and the "Scandinavian Monetary Convention." The former includes France, Belgium, Italy, and Switzerland, the agreement having been made in 1865, in virtue of which the coins of those countries are of the same weight and fineness. Greece subsequently joined the convention, and Spain, Austria, and Hungary, Finland, Rumania, Servia, Bulgaria, and Monaco have coined money identical with that of the countries included in the convention. The "Scandinavian Monetary Convention" dates from 1873, and includes Norway, Sweden, and Denmark."

**Money**, a word, in its ordinary sense, equivalent to pieces of metal, especially gold and silver, duly stamped and issued by the government of a country to serve as a legalized standard of value. In this sense it is more precisely designated metallic money or coin to distinguish it from paper money, from which latter it is also distinguished by having an intrinsic value.

On June 1, 1925, the population of Continental United States was estimated at 113,493,720. The total money in circulation on July 1, 1924, was \$4,755,403,035. This was equal to about \$42 per capita.

**Mongolia**, a region of N. E. Asia; between China and Asiatic Russia; formerly belonging to China; declared its independence and was occupied by Russia in 1912; area, about 1,367,600 square miles; pop. est., 2,600,000; is largely in the Desert of Gobi, and on or near its borders are lofty mountain chains, the principal of which are the Altai, the Sayansk, the Khinghan, and the Inshan. The inhabitants lead a nomadic life. They possess large herds of cattle, sheep, and horses. The climate is intensely hot in summer and bitterly cold in winter.

**Mongolian**, in philology, an epithet sometimes applied to the whole class of Turanian tongues; sometimes specifically applied to that group spoken by the Kalmucks and other tribes from Tibet to China. In ethnology, one of the five great races of the world discriminated and named by Blumenbach, and adopted by Cuvier when he reduced Blumenbach's five to three. The head is square; the face flattish, nearly as broad as long, the parts not well distinguished from each other; the eyelids narrow, obliquely turned up at their outer angle; the space between the eyes flat and broad, the nose flat, the cheeks projecting, the chin somewhat prominent. The hair is straight, the color black, that of the face and body yellowish (sometimes inaccurately called olive, which implies an admixture of green). It includes not merely the natives of Mongolia properly so called, but the Tartars, the Chinese, the Japanese, the Samo-ides, the Cochinese, the Burmese, the Tamuls, the Turks, the Hungarians, and the Finns.

**Monitor**, the type of a family of lizards. They are the largest of the lizard order, some species, such as that of the Nile and Egypt, attaining a length of six feet. They generally inhabit the neighborhood of rivers and lakes, and feed upon the eggs of crocodiles, turtles, and those of aquatic birds. The name is owing to the belief formerly entertained that these lizards gave warning of the approach of crocodiles.

**Monitor**, the popular name for a class of very shallow, heavily-armed iron-clad steam vessels, invented by Ericsson, carrying on their open decks either one or two revolving turrets,

each containing one or more enormous guns, and designed to combine the maximum of gun-power with the minimum of exposure. Monitors are so called from the name of the first vessel of the kind, built during the American Civil War, which proved its



**MONITOR.**

superiority in a famous engagement with the "Merrimac" in 1862, at Hampton Roads, at the mouth of James river, Va. The "Merrimac" at last gave up the contest, badly damaged, and so much disabled as to require the aid of tugs to get her away. The "Monitor" was uninjured. As the first encounter of iron-clad vessels, this contest created much interest in all maritime nations, and was the direct cause of many modifications in the construction of warships in the navies of Europe, though nowhere except in the United States navy was the monitor adopted as a distinct type of warship. The construction of monitors is thought to have led to that of torpedo boats.

**Monk**, a male religious living in community (except the Chartreux and Camaldoli, who are strictly solitary), bound by rule and practising the counsels of perfection. The name was in universal use till the rise of the friars in the 13th century, and belongs properly to none but members of the Benedictine Order and its offshoots, though it is often loosely applied to any male religious.

**Monk, George, Duke of Albemarle**, an English military commander; born in Potheridge, Devonshire, England, Dec. 6, 1608. After the death of Cromwell he was influential in restoring the Stuart family to the throne, in the person of Charles II. As the reward of his loyalty, he was created Duke of Albemarle, with a pension of \$5,000 a year, made a privy-councillor, and invested with the

order of the Garter. In 1664 he was appointed admiral of the fleet in conjunction with Prince Rupert, and in 1666 obtained a great victory over the Dutch, in a battle which lasted three days. He died Jan. 3, 1670, and was buried in Westminster Abbey.

**Monkey.** In zoology (1) A popular name for any one of the quadrumanous mammals having a well developed tail, those wanting tails being called apes. (2) A quadrumanous mammal having a tail and callosities, but no cheek pouches, as distinguished from a baboon, which has both, and an ape, which, besides being tailless, has neither.

**Monmouth, Battle of**, an engagement between the American forces under General Washington, and the British under Sir Henry Clinton, near Freehold, Monmouth co., N. J., June 28, 1778. General Washington, having overtaken the British forces which had previously evacuated Philadelphia for the purpose of embarking at Sandy Hook, ordered the advance, under Gen. Charles Lee, to attack the enemy. The Americans were at first successful, but from some unknown cause they were seized with a panic, in which General Lee participated, and fell back to the main body. General Washington denounced Lee, succeeded in rallying the fugitives, and repulsed the British. The approach of night and the exhaustion of the men prevented a pursuit, and the British succeeded in escaping under cover of darkness. The American loss was 69 killed and 160 wounded; that of the British, nearly 300 killed and 100 prisoners, including the wounded.

**Monmouth, James Fitzroy, Duke of**, a natural son of Charles II. of England; born in Rotterdam, April 9, 1649. At the age of 14 he was created Duke of Monmouth, and two years later was made Master of the Horse. On the accession of James II., being urged to the act by some of his partisans, he landed at Lyme, with scarcely 100 followers (June, 1685), but their numbers were soon increased, and he assumed at Taunton the title of king, and asserted the legitimacy of his birth. The royal forces were sent against him, and an engagement took place at Sedgemoor, near Bridgewater, July 6. The rebels were defeat-



ed, and the duke himself was made prisoner. He nobly refused to betray his accomplices, and conducted himself with much firmness on the scaffold, where his head was severed from his body, after four unsuccessful blows, July 15, 1685.

**Monmouth College**, a coeducational institution in Monmouth, Ill.; founded in 1856 under the auspices of the United Presbyterian Church.

**Monogram**, a character or cipher composed of one, two, or more letters interwoven, and used as a sign or abbreviation of a name or word. The term is now applied to conjoined initials of a personal name on seals, trinkets, letter paper, and envelopes, etc., or employed by printers, painters, engravers, etc., as a means of distinguishing their work.

**Monograph**, a work in which a particular subject in any science is treated by itself, and forms the whole subject of the work—"an all-sided and exhaustive study of a special or limited subject," as it has been called. Monographs have contributed much to our knowledge, especially in the department of the natural sciences. The term, however, is often used for a small book on miscellaneous topics.

**Monolith**, a column or block formed of a single stone; the term is applied to such erections as the obelisks of Egypt.

**Monomania**, madness or derangement of the mind with regard to one subject only.

**Monometallism**, the fact or principle of having only one metal as a standard for coinage; belief in the advantages of a single metallic standard for money.

**Monopoly**, an exclusive trading right; the exclusive right or privilege of production, sale, or purchase of any commodity; the sole right or power of selling any commodity; the exclusive right or privilege of trading in any community, or with any country; license from the proper authority to any person or company to make, sell, export, import, buy, or otherwise deal in any commodity or number of commodities. Thus, a patent for an invention gives the patentee the exclusive right of making or dealing in the article patented. Also that

which is the subject of a monopoly; as, Opium is a government monopoly in India; the Standard Oil Company have a monopoly. Also the assuming or claiming right to or possession of anything to the exclusion of others; as, He claims a monopoly of the conversation.

In law, the only monopolies that the laws of the United States and the individual States look on with favor consist of the Postoffice, which is a government monopoly, and the rights granted to individuals under the Patent and Copyright laws; a patent covering a period of 17 years with no renewal except by a special act of Congress, and a copyright 28 years with a renewal of 14 years if certain conditions are complied with. Monopolies commonly known as trusts are looked on with odium, and various States have enacted laws making a trust an illegal combination of individuals.

**Monothelism**, the term usually employed to denote a belief in the unity of the Godhead, or belief in and worship of one God. It is thus the opposite of polytheism. The doctrine of the Trinity is thought by some (e. g. the Unitarians) to be incompatible with the monothelism taught by Jesus Christ, and is therefore rejected as no part of His teaching. Mohammedans and Jews, of course, reject with vehemence the least approach to a Trinitarian conception of the Deity.

**Monothelitism**, the doctrine of the Monothelites, that Christ had but one will in His two natures.

**Monroe, Fort**, the most extensive work of a defensive character in the United States, formerly known as Fortress Monroe. It is situated at the end of the peninsula of Old Point Comfort, Va., between the York and the James rivers. The position of the fort commanding the waters of Hampton Roads and the approach to Norfolk makes it a vital point in the line of coast defense. The work was begun in 1817 (the year of the election of President Monroe for whom it was named) and the original intention was to construct a fortress of European type. The design was never carried out, and, though bastioned, the fort is unaccompanied by the outworks usual in the class of defensive works called fortresses.

**Monroe, James**, an American statesman and 5th President of the United States; born in Westmoreland co., Va., April 28, 1758. He enjoyed the advantages of a classical school and of William and Mary College, which he left, in 1776, after two years' study to join the Continental army. He was wounded at the battle of Trenton, took active part in the battles of Brandywine, Germantown, and Monmouth, rising to the rank of colonel. In 1782 he was elected to the Assembly of Virginia, and in 1783 became a delegate to the Continental Congress. On leaving Congress after three years of service he returned to law practice, but was immediately elected to the Virginia Legislature, and the next year, 1788, became a delegate to the Virginia convention that ratified the Constitution in which he opposed its adoption. Washington appointed him minister to France in 1794. On his return, in 1799, he was elected governor of Virginia. In 1802 he was sent to France as envoy extraordinary by Jefferson to negotiate the Louisiana Purchase. He was minister to Great Britain in 1803-1808, where he negotiated a treaty that proved so unacceptable to the people and Congress of the United States that he was for a time extremely unpopular. He retired to Virginia, but was again elected governor in 1811, and the same year appointed Secretary of State under Madison, combining in his duties also the functions of Secretary of War. In 1817 he succeeded Madison as President, and was reelected to a second term. His administrations were uneventful, the chief features of note being the purchase of Florida from Spain, the adoption of the Missouri Compromise, and the enunciation of the Monroe Doctrine. In 1825 he retired to private life in Virginia. In 1830 he took up his residence with his son-in-law in New York, where he died, July 4, 1831.

**Monroe Doctrine**, a policy of the United States, first definitely announced by President James Monroe, that is intended to prevent interference by European powers in the affairs of the several American States. President Monroe's annual message to Congress in 1823 contained the following sentences: "We owe it to candor

and to the amicable relations existing between the United States and the allied powers, to declare that we should consider any attempt on their part to extend their system to any portion of this hemisphere as dangerous to our peace and safety. With the existing colonies or dependencies of any European power we have not interfered, and shall not interfere; but with the governments which have declared their independence and maintained it, and whose independence we have, on great consideration and just principles, acknowledged, we could not view an interposition for oppressing them, or controlling in any other manner their destiny by any European power, in any other light than as a manifestation of an unfriendly disposition toward the United States." Also, "The American continents should no longer be subjects for any European colonial settlement." These expressions embody what is known as the Monroe doctrine. As popularly understood, the Monroe doctrine meant a political protection and a guaranty of freedom from European interference to all States of North and South America.

**Mons**, a town of Belgium, capital of the province of Hainaut, 27 miles S. E. of Tournai; was formerly fortified and conspicuous in the wars of the 17th and 18th centuries; has the noted cathedral of St. Waltrudis, begun in 1450, measures 355 feet in length. It is in a rich coal region and has manufactures of textiles, iron, and other metallic products. In 1917 it gave its name to a battle fought nearby in August, the fighting on the 26th being pronounced greater than that at Waterloo, and resulted in a British victory. Pop. (1926) 27,930. See APPENDIX: *World War*.

**Monsignore**, a title of honor given to prelates of the Roman Catholic Church.

**Monsieur** (abbreviated M.; plural Messieurs, abbreviated MM.), in common use in France, it answers both to Sir and Mr., and is also used before titles.

**Monsoons**, a modification of the trade winds, operative from the Tropic of Cancer to lat. 7° S., and from the coast of Africa through the Indian

Ocean and the Bay of Bengal to Japan and the Western Pacific. There are two monsoons, the Southwestern and the Northeastern. The latter prevails from October to April, and the former from April to October. The bursting of the monsoon commences the rainy season in India, the Southwestern bringing that of Bombay and Central India, and the Northeastern that of Madras and other parts of the coast. The monsoons are caused by the unequal heating of the land and water and of the several land masses themselves in the regions which they affect.

**Monstrosity**, a character appearing in an individual animal or plant, which is very rare in the species to which it belongs. They arise in man, in the inferior animals, and in plants.

**Montagnards**, or simply **Montagne** ("the Mountain"), the name given to the extreme democratic politicians in the first French Revolution, because they seated themselves on the highest benches of the hall in which the National Convention met. The body included both Jacobins and Cordeliers, the men of "the Reign of Terror." The antagonistic party were "the Plain," the Girondists, who sat on the lowest benches, on the floor of the house.

**Montagu, Lady Mary Wortley**, an English author; the eldest daughter of Evelyn, Duke of Kingston; born in Thoresby, Nottinghamshire, England, about 1689. In 1712 she married Edward Wortley Montagu, whom she accompanied in 1716 on his embassy to Constantinople, from which place she wrote "Letters" to Pope, Addison, and other eminent literati of the time, which are very interesting and contain many curious facts respecting the manners of the Turks. She also first introduced the practice of inoculation into her native country. Her collected works have been published in six volumes; and her "Letters" certainly place her at the head of female epistolary writers in Great Britain. She died in England, Aug. 21, 1762.

**Montaigne, Michel, Seigneur de**, a French essayist; born in Chateau de Montaigne, Dordogne, France, Feb. 28, 1533. He was taught Latin from his cradle, and till he was six

years of age was not permitted to hear any other language. He was then sent to the college of Guienne, at Bordeaux, where he remained seven years, having in that time gone through the whole college course. His great work, his "Essays" (1580), contains a treasure of wisdom. The essays embrace a great variety of topics touched upon in a lively entertaining manner, with all the raciness of good sense, careless of system or regularity. They are not written in formal style on any particular subject. Sentences and anecdotes from the ancients are interspersed at random. He died Sept. 13, 1592.

**Montalembert, Charles Forbes Rene, Comte de**, a French publicist; born in London, England, May 29, 1810. His father was a French emigre, afterward a peer of France under the Restoration; his mother was English. Of his numerous writings the chief are: "Monks of the West"; "Life of Saint Elizabeth of Hungary"; and "Political Future of England." He died in Paris, France, March 13, 1870.

**Montana**, a State in the Western Division of the North American Union, admitted to the Union, Nov. 8, 1889; number of counties, 56; area, 146,997 square miles; pop. (1920) 548,889; (1930) 536,332. Capital, Helena.

The surface of the State is highly diversified. In the W. it is extremely mountainous. E. of the Rocky Mountains is a rolling tableland, traversed by several large rivers. In the S. near the Yellowstone river the mountains reach an altitude of 10,000 feet and the peaks are perpetually covered with snow.

The State is exceedingly rich in minerals, though the resources are but partially developed. In 1929 Montana ranked third in the output of copper, with 299,895,000 pounds. That was its most productive of recent years in its general mineral output, the total value reaching \$74,752,000. Copper was the largest contributor to this total, followed by coal, 3,170,000 tons, silver, 12,650,000 oz., gold, 55,000 oz., lead, 26,795 tons, and petroleum, 3,183,000 bbls.

In 1925 the estimated value of all farm property was \$574,897,007, and in the calendar year 1929 the values

## Montana

of 67 farm crops were as follows: wheat, \$38,181,000; oats, \$4,803,000; potatoes, \$3,366,000; barley, \$2,731,000; flaxseed, \$2,626,000; hay, \$30,762,000. There were 46,094 farms, 500,000 horses, 3,913,000 sheep, 186,000 milch cows, 1,152,000 other cattle and 328,000 swine.

In 1927 it was estimated that the State had 565 manufacturing plants, employing 14,242 wage earners, paying \$20,915,000 in wages, \$151,792,000 for raw materials and yielding an annual output valued at \$203,503,000.

In 1928 the public school enrollment was 117,972 pupils and 6,377 teachers in elementary and secondary schools. For higher education there were 193 public high schools with 1,163 teachers and 24,094 pupils; 5 colleges, universities and professional schools with 210 professors and instructors and 3,139 students. There were \$13,005,000 spent for public elementary schools.

There were 502 religious organizations reported in 1925 having a total of 95,425 members. The Roman Catholics were the strongest body, followed by the Methodists, Baptists, and Presbyterians.

In 1928 there were 5,232 miles of steam and 109 miles of electric railroads in operation, the former representing seven of the great systems.

On June 30, 1929, 67 National Banks were reported to have total resources of \$101,900,000, \$44,135,000 demand deposits and \$38,561,000 time deposits. The State Banks and Trust Companies held savings deposits amounting to \$77,400,000. There was a total of 201 banks in the State with combined resources of \$190,486,000.

The State revenue in 1927 was \$8,595,265; expenditures, \$8,011,378; net state debt, \$4,751,148. The assessed valuation of property was \$435,510,159; tax levy, \$3.55 per capita.

The governor is elected for a term of four years, and receives a salary of \$7,500 per annum. Legislative sessions are biennial and limited to 60 days each. The Legislature in 1917 had 41 members in the Senate and 95 in the House. There were 2 Representatives in Congress.

**Montbéliard**, a town of E. France, 15 miles from the Alsace border; has manufactures of clocks, watches, cotton goods, hosiery, and textile ma-

## Monte Carlo

chinery. In 1793 the inhabitants voluntarily submitted to annexation by France, and the town has been an important point in the frontier defenses of France since 1871. Fortifications on outlying hills connect it with Belfort on one side and Besancon on the other. Pop. about 10,000.

**Mont Blanc**, the highest mountain in Europe (if the Caucasus be regarded as Asiatic); 15,782 feet above sea level; situated in France, close to the Italian frontier, 40 miles S. of the Lake of Geneva. There is an observatory (1890) at a height of 14,470 feet.

**Montcalm, Louis Joseph Saint Veran, Marquis de**, a French general; born near Nîmes, France, Feb. 29, 1712. Having entered the army he distinguished himself in several campaigns in Europe, and in 1756 was appointed to the chief command of the French troops in Canada. Here he took Fort Ontario (Oswego) and Fort William Henry (on Lake George), and occupied Ticonderoga (1758); but at Quebec, Sept. 14, 1759, was completely defeated by General Wolfe on the Heights of Abraham, both commanders being mortally wounded.

**Mont de Piété**, a public benevolent institution, existing in Italy, France, Spain, etc., and said to have been first established at Perugia in the latter half of the 15th century by Father Barnabas of Terni, and to have taken its name from the hill on which it was situated. The object was to deliver the needy from the usurious money lenders, by lending money on pledges at a very moderate rate of interest, so as barely to cover the necessary expenses. There are at present, besides those in Italy, about 50 monts de piété in France, upward of 100 in Holland, about 20 in Belgium, and some in Germany. The mont de piété of Paris advances to the value of about two-thirds of the pledges.

**Montdidier**, a town of N. France, on the right bank of the Don; 23 miles S. E. of Amiens, 50 miles N. of Paris. In 1636 a successful resistance to Spanish troops was made here. The principal industries are tanning and the manufacture of zinc-white. Pop. about 5,000.

**Monte Carlo**, the casino in Monaco. The first stone was laid in 1858. The "Association of the Watering-

## Monte Cristo

Place and Strangers' Club of Monaco," whose capital is \$6,000,000 in 60,000 shares, holds a contract, which was made with the late Prince Charles, and expires in 1913. It has practically to bear the cost of spiritual and temporal government for the principality, paying annually \$650,000, of which \$250,000 goes to the Prince, and the remainder to State purposes, justice, police, church, education, etc.

**Monte Cristo**, a small island 6 miles in circumference belonging to Italy, 25 miles S. of Elba, the seat of a penal colony. Dumas has given the name of this isle to the hero of one of his most popular romances.

**Montefiore, Sir Moses**, a Jewish philanthropist, descendant of a wealthy family of bankers; born in Leghorn, Italy, Oct. 24, 1784. From 1829 onward he took a prominent part in the struggle for removing the civil disabilities of English Jews. In 1837 he was knighted, and in 1846 was raised to a baronetcy in recognition of his meritorious public services. He distinguished himself by his practical sympathy with his oppressed countrymen in various parts of the East, chiefly in Poland, Russia, Rumania, and Damascus. He made seven journeys to the East, the first being in 1827, and the latest in 1874, chiefly for the amelioration of the condition of his countrymen. In memory of his wife he endowed a Jewish college at Ramsgate in 1865. In his 100th year he was still hale and well, but died in Ramsgate, England, July 29, 1885.

**Montenegro**, a state of the new Kingdom of Serbs, Croats and Slovenes. Area, 3,733 sq. m. Pop. (1920) 199,857. Joined new Kingdom 1921. The surface is everywhere mountainous, being covered by an extension of the Dinaric Alps, rising to the height of 8,850 feet. There are, however, a few beautiful and verdant plains and valleys, in which the soil is tolerably fertile. The climate is healthy. Forests of beech, pine, chestnut, and other valuable timber cover many of the mountain sides. Fruit trees of all kinds abound, especially in sheltered valleys, where almonds, vines and pomegranates ripen. Agriculture is in a rude, inefficient state, though every cultivable piece of land is planted with wheat, cabbages, or some other useful

## Montesquieu

plant. Sheep, cattle, and goats are reared in great numbers. Manufactures, with exception of a coarse woolen stuff, are unknown. The chief occupations of the Montenegrins are agriculture and fishing, trade being altogether left to foreigners. The exports are sheep and cattle, mutton-hams, sumach, honey, hides, cheese, butter, and other agricultural produce. The Montenegrins are pure Serbs and speak a Serbian dialect. The history of Montenegro for many years is a record of deadly struggle with the Turks, and of a slowly-growing civilization among its inhabitants. The present ruler, King Nicholas I., was proclaimed Aug. 14, 1860. In 1861-62 he engaged in a not altogether successful war against Turkey; but in 1876 he joined Serbia and in 1877-78 Russia against his hereditary foe, with the results that 1,961 square miles were added to his territory by the Treaty of Berlin. In October, 1912, Montenegro joined Bulgaria, Serbia, and Greece in declaring war against Turkey, and in the ensuing campaign the Montenegrin army was the first to invade Turkish territory and to engage and defeat Turkish troops, at Berana. Montenegro took part in the World War on the side of the Entente Allies. In 1915 it was overcome by the Austrians and Germans; on Jan. 13, 1916, Cetinje, the capital, was captured; and the seat of government was removed to Lyons, France. See APPENDIX: *World War*.

**Monterey**, a city and capital of the State of Nuevo Leon, Mexico; is in a fertile plateau-valley, 670 miles N. of Mexico city. It is a well-built town, with a thriving trade, and contains a cathedral, seminary, and schools of law and medicine. It was founded as Léon in 1581, and received its present name in 1599. In 1846 it was taken by the American army under General Taylor. Has well-paved and clean streets. Pop. (Est.) 80,000.

**Montesquieu, Charles de Secondat, Baron de**, a famous French writer; born in the castle of La Brede, near Bordeaux, France, Jan. 18, 1689. In 1716 he became president of the Parliament of Bordeaux. The publication of the "Persian Letters" first made him famous as an author. His greatest work is the



"Spirit of Laws," which occupied him 20 years, was published in 1748, and secured to him a very high place among writers on political science. He died in Paris, Feb. 10, 1755.

**Montevideo**, capital of Uruguay, on a small peninsula on the N. coast of the estuary of the La Plata, 130 miles E. S. E. of Buenos Ayres. It is one of the best built towns in South America, and enjoys one of the finest climates. The commercial development of Montevideo was much retarded by the shallowness of its harbor; but this has been greatly improved, and extensive dry docks have been constructed. The chief exports are wool, hides, tallow, dried beef, and extracts of flesh; chief imports, cottons, woollens, hardware, and other manufactured articles. Montevideo sends out above half the whole exports of Uruguay, and receives all but a small fraction of the imports. Pop. (1926) 439,129.

**Montezuma II.**, surnamed Xocotzin, or "The Younger," 9th King of Mexico; born about 1476. He was elected on the death of his grandfather, in 1502. In 1519, Cortez and the Spaniards invaded the empire and approached the capital. Montezuma sent presents and complimentary messages to them, but was in the utmost terror. He at length went with a magnificent cortege to meet Cortez, and conducted him into the city, where after eight days of ceremonious civilities, Cortez made Montezuma his prisoner, and the captive king professed himself a vassal of Charles V. On June 27, 1520, Montezuma, while standing on the walls in his royal robes, exhorting his subjects to submit to their enemies was wounded, before the Spaniards could cover him with shields, and died three days later.

**Montfaucon**, a town of N. France, 13 miles N. W. of Verdun, midway between the valleys of the Meuse and Aire, 23 miles from the Belgian frontier, and a few miles E. of the Argonne Forest. It was here that the body of Admiral Coligny, a victim of the massacre of St. Bartholomew, was hung up by the heels on the gibbet.

**Montfort, Simon de**, a French crusader, descended from the lords of Montfort, near Paris. His career

dates from 1199, when he went to the Holy Land, companion-in-arms of Thibault, Count of Champagne; but it becomes of more historical importance in 1208, when he was appointed chief of the barbarous crusade against the Albigenses, then protected by Raymond, Count of Toulouse. In 1213 he obtained a great victory at Muret over the confederated armies of that prince, of his brother-in-law, Peter, King of Arragon, and the nobles who had united with them, and was then appointed by the Pope sovereign of all the countries conquered from the alleged heretics. He was killed while besieging Toulouse, June 25, 1218.

**Montfort, Simon de**, younger son of the preceding; born about 1208; killed in the battle of Evesham, Aug. 5, 1265. De Montfort originated the House of Commons.

**Montgolfier, Joseph Michel** (1740-1810) and **Jacques Etienne** (1745-1799), joint-inventors of the balloon, were born in Vidalon-les-Annonay, France. Their first balloon inflated with rarefied atmospheric air, ascended from Annonay in 1782. Joseph invented the water-ram.

**Montgomery**, city and capital of Montgomery county and of the State of Alabama; on the Alabama river and the Seaboard Air Line and other railroads; 95 miles S. E. of Birmingham; is the metropolis of a large territory; chief business interests, mercantile manufacturing and farming; was the first capital of the Southern Confederacy; contains a Federal Building, Masonic Temple, Lafayette House, Confederate Monument, and several cotton and cotton-seed oil mills. Pop. (1930) 66,079.

**Montgomery, Richard**, an American military officer; born in Swords, Ireland, Dec. 2, 1737. He was with Wolfe at the taking of Quebec in 1759. On his return to England he resigned his commission and emigrated to America. At the outbreak of the Revolutionary War he was given the command of the Continental forces in the N. department. He reduced Fort Cherokee; took Montreal; but was killed, Dec. 31, 1775, in an attempt on Quebec.

**Month**, in astronomy, properly the time in which the moon makes one

complete revolution round the earth, or appears to return to precisely the same point in the heavens from which it started. The time of the revolution now described is properly 29 days, 12 hours, 44 minutes, and 3 seconds.

**Monti, Luigi**, an American writer; born in Palermo, Sicily, in 1830. Being exiled, he went to Boston, Mass., in 1850. Besides contributions to magazines, he published "The Adventures of an American Consul Abroad." Longfellow introduced him in his "Tales of a Wayside Inn" as the young Sicilian. Died in 1914.

**Monticello**, the estate and home of Thos. Jefferson in Albermarle co., near Charlottesville, Va. The great statesman is buried in a small private graveyard adjoining the road leading to the residence.

**Montmorency**, a river of Quebec, a tributary of the St. Lawrence, famous for its beautiful falls, 8 miles N. E. of Quebec. Here the stream is 100 feet wide, and the falls have a sheer descent of 250 feet.

**Montejo, Patricio**, a Spanish naval officer; born about 1833; commanded the fleet of Spain in the battle of Manila Bay, May 1, 1898. His flagship, the "Reina Christina," was engaged in turn by the "Olympia," the "Baltimore," the "Raleigh," and the "Boston" of the American fleet. The flagship having received 70 shots that killed 52 men and wounded 150, and having taken fire, the admiral transferred his flag to a gunboat. His fleet was entirely destroyed or sunk. During September of the following year, Admiral Montejo was tried by court-martial in Madrid, and was condemned to retirement without the right of promotion. In his defense, he contended that the responsibility of the defeat at Manila Bay rested on the Spanish government, which had failed to put the fleet and harbor in a defensive condition.

**Montpelier**, a city, county-seat of Washington co., and capital of the State of Vermont, on the Winooski river, and on the Wells River, 40 miles S. E. of Burlington. Pop. (1930) 7,837.

**Montpensier, Antoine Marie Philippe Louis D'Orleans, Duc de**, 5th son of Louis Philippe, king of

the French; born in Paris, July 31, 1824. He married the Infanta Maria Louisa, sister of Queen Isabella II. of Spain. Montpensier, after receiving the title of Infant of Spain, was made captain-general of the Spanish army in 1859. His eldest daughter, Princess Maria, was married in 1804, to her cousin, the Count of Paris, heir male of the royal house of Orleans. After the flight of Isabella II. from Spain in 1868, the duke was proposed as a candidate for the crown. In 1878, his third daughter, Mercedes, became the wife of King Alfonso XII. of Spain. She died in June of the same year. Montpensier died near Seville, Spain, Feb. 4, 1890.

**Montreal**, the metropolitan city of Canada; on an island of the same name, in the province of Quebec, at the head of ocean navigation on the St. Lawrence and to inland waterways to Lake Superior, a distance of 1000 miles; 160 miles S. W. of Quebec. It is the largest grain port in the world and the second largest seaport in North America. There are 9 miles of deep draft wharf capable of accommodating 100 ocean steamers; 4 fire-proof grain elevators, cap. 15,102,000 bus.; and 4,628,000 cubic feet of cold storage space. In 1928 there were 1,834 industrial plants and in 1930 the export grain movement amounted to 69,083,800 bus. Montreal is one of the world's greatest winter resorts.

The city has an area of 32,155 acres or 50 square miles; 92 parks and playgrounds totaling 1,728 acres; and 900 miles of streets including 304 miles of street railway.

The twin towers of the Roman Catholic Church of Notre Dame, the parish church of Montreal built 1824-1829, constitute the most characteristic landmark of Montreal. The towers are 227 feet high, and one of them contains the largest bell on the continent, the "Gros Bourdon," weighing 24,780 pounds. The church is the largest in North America, and will hold 15,000 people.

Chief among educational institutions are McGill University; a branch of Laval University, Quebec; the medical faculty of Bishop's College University, Lennoxville; the Seminary of St. Sulpice; St. Mary's College (Jesuit); and the Ville Marie, Sacred



**Heart and Hochelaga Convents.** The public schools of Montreal are controlled by boards of Roman Catholic and Protestant School Commissioners respectively, who are appointed partly by the provincial government and partly by the city council. The common schools and high schools are supported partly by a school tax on real estate. No child is debarred from education through not being able to pay fees.

**Ville Marie**, afterward called **Montreal**, was founded by **Maisonneuve**, May 18, 1642, during the French regime in Canada. On Sept. 8, 1760, Montreal capitulated to General **Amherst** and the surrender of the city completed the conquest of New France by the English. In 1775 Montreal was captured by the Americans, who sent expeditions under **Montgomery** and **Arnold** to capture Quebec and Montreal; and General **Carleton** in command of the British forces at Montreal had to retreat to Quebec, where the Americans were ultimately defeated. In 1775 the American General **Wooster** made his headquarters in the **Chateau de Ramergay**, which still stands opposite the city hall and which was the official residence of the British governors after the conquest. In this same chateau, the Commissioners of Congress, **Benjamin Franklin**, **Samuel Chase**, and **Charles Carroll**, in 1776 met and held council under Gen. **Benedict Arnold**. In 1776 the American forces retreated. Montreal obtained its first city charter in 1833, the first mayor being **Jacques Viger**. The city has an almost unbroken record of commercial and industrial progress. Great impetus was given to its growth by the opening of the Canadian Pacific Railway in 1886. In 1901 a great fire in the commercial section wrought damage estimated at \$4,000,000. Pop. of city municipality (1930 Est.) 1,098,409.

**Montrose, James Graham, Marquis of**, a Scotch noble, and a distinguished royalist leader under **Charles I.**; born in **Edinburgh, Scotland**, in 1613. He took a very active part on the side of the king, was created a marquis, and in a few months gained the battles of **Perth, Aberdeen**, and **Inverlochy**. In 1645 his fortune changed; and after suffering a defeat

from **Lesley**, at **Philiphaugh**, near **Selkirk**, he left the kingdom. In 1648 he returned, but was captured and decapitated at **Edinburgh**, May 21, 1650.

**Mont Saint-Michel**, a conical rock in the Bay of **St. Michel, Normandy, France**, crowned by a famous mediæval abbey and village.

**Monumental City**, **Baltimore, Md.**, so named from the many monuments it contains, **Washington, Battle**, etc.

**Moody, Dwight Lyman**, an American evangelist; born in **Northfield, Mass.**, Feb. 5, 1837; received a common school education; united with the **Mount Vernon Congregational Church** in **Boston** in 1850; settled in **Chicago, Ill.**, in 1856, and there built up a mission Sunday-school with more than 1,000 pupils. He subsequently built a church in **Chicago**, which was destroyed in the great fire in 1871, but was afterward rebuilt under the name of the **Chicago Tabernacle**. In 1873 he began with **Ira D. Sankey**, the evangelistic work which soon made him famous, both in the **United States** and **Great Britain**. In 1879 he founded a school for the poor girls at **Northfield, Mass.**, which later grew into the celebrated **Northfield and Mount Hermon** institutions. It is said that during his ministry, Mr. Moody addressed over 50,000,000 people. He died in **Northfield, Mass.**, Dec. 22, 1899.

**Moody, William Henry**, American jurist; born in **Newbury, Mass.**, Dec. 23, 1853; was graduated from **Harvard** in 1876; was district attorney for the eastern district of **Massachusetts**, 1890-1895; was a member of Congress 1895-1902; Secretary of the Navy 1902-1904; U. S. Attorney-General 1904-1906; Justice of the Supreme Court 1906-1910. [D. 1917.

**Moon**, the single satellite attendant on the earth. Its diameter is 2,160 miles. Its superficial extent is about a 13th part of the earth's surface; its bulk is  $\frac{1}{8}$  that of the earth, but as the earth is relatively heavier, its weight is about 80 times that of the moon. The moon shines only by the light of the sun reflected from its surface. To equal the brilliance of the sun 600,000 full moons would be required. The moon appears at all times nearly of the same size, showing that its orbit

cannot be far from circular. Its average distance is 240,000 miles, but the ordinary fluctuations do not exceed 13,000 miles on either side of the mean value. The moon performs a complete revolution around the earth in 27 days, 7 hours, 23 minutes, and 11 seconds. This is called its sidereal period. The lunar month is longer than the sidereal period by 2 days, 5 hours, 51.41 seconds, because of the advance of the earth in the orbit between two successive conjunctions of the moon. As the moon revolves on its own axis nearly in the same time as it completes its orbit round the earth, it presents to us at all times nearly the same side of its surface. No clouds appear on it. The whole surface is studded with volcanoes, apparently extinct. Their craters are broad, beyond anything existent on the earth. Some are 16,000 and 17,000 feet deep. From the absence of an atmosphere the moon must be uninhabitable by any life analogous to that with which we are acquainted. Early in 1898, Dr. George Waltemath, a German astronomer, announced the discovery of a small, "dark" moon near the earth, large enough to disturb the moon's motion. Prof. Richard A. Proctor in his "Other Worlds Than Ours" expresses the opinion that the earth is attended by several dark moons. Also a satellite of any planet. A blue-moon, an expression equivalent to the Greek kalends, never. In the moon; beyond the moon, beyond reach; extravagantly; out of depth. Moon in distance, in nautical language, a phrase denoting that the angle between the moon and the sun, or a star, admits of measurement for lunar observation.

**Moon, Mountains of the,** the name given, on the authority of Ptolemy, to a chain of mountains long supposed to extend across the whole African continent at its broadest part, and which he indicated as containing the sources of the Nile. In reality no such range exists, though there are numerous different mountain systems in that extensive region.

**Mooney, James,** an American ethnologist; born in Richmond, Ind., Feb. 10, 1861. From a boy of 12 his specialty was Indian ethnology. Became connected with the Bureau of American Ethnology at Washington, 1885.

**Moonshine** — Illicit whisky — before Prohibition colloquial to Southern and Western states.

**Moonwort**, an interesting fern, of simple structure, consisting of a root-stock bearing a single erect stem from three to six inches high, found in North America and Northern Europe. The largest growing species is named the rattlesnake fern, from the circumstance that it generally abounds in places frequented by that reptile.

**Moors**, a native of the N. coast of Africa, now represented by the countries of Morocco, Algeria, Tunis, and Tripoli. In 709 the Arabs conquered Mauritania, and converted the people to Mohammedanism. The conquerors and the conquered amalgamated together, and in 711 an army of this mixed population, under Arab leaders, crossed at the Straits of Gibraltar, and began the conquest of the Spanish peninsula. This they speedily effected, with the exception of the mountainous districts of Asturias and Galicia. When almost the whole of the rest of Europe was sunk in ignorance and barbarism, learning and the arts flourished among the Moors in Spain. About the middle of the 11th century, many of the local governors threw off their allegiance, and established themselves as independent potentates. The wars that followed so weakened the power of the Moors, that the Christians rose against them under Alfonso, and took Castile, with its capital, Toledo. Subsequently they continued to extend their conquests till the power of the Moors was restricted to the kingdom of Granada, and in 1238 the king of that territory became the vassal of Ferdinand III., King of Castile. At length, in 1491, Ferdinand V., King of Castile and Aragon, after a 10 years' war, conquered this also, and put an end to the dominion of the Moors in Spain, after it had lasted nearly 800 years. A portion of the Moors then returned to Africa; but most of them remained in Spain. Philip II., however, in his hot zeal for Catholicism, resolved on their entire destruction, and by his oppressions and cruelties, drove them into insurrection, in Granada (1571), after the suppression of which over 100,000 of them were banished. Their expulsion from the country was com-

pleted by Philip III.; and this has been regarded as one of the leading causes of the subsequent decline of Spain; for they were ingenious and industrious citizens, and, after their departure, agriculture, trade, and manufacture fell into decay. The term Moor is sometimes used for a Moham-medan.

**Moore, Charles Leonard**, an American poet; born in Philadelphia, Pa., March 16, 1854; he was consul at San Antonio, Brazil, 1878-1879.

**Moore, Clement Clarke**, an American author; born in New York city, July 15, 1779. He was the compiler of the first Hebrew and Greek lexicon published in America, and the author of a book of "Poems," in which is included his best-known poem, "A Visit from St. Nicholas." He was the donor of the extensive grounds on which the General Theological Seminary, New York city, stands. He died in Newport, R. I., July 10, 1863.

**Moore, George Henry**, an American historian; born in Concord, N. H., April 20, 1823. He died in New York city, May 5, 1892.

**Moore, Sir John**, a British military officer; born in Glasgow, Scotland, Nov. 13, 1761. Having obtained an ensign's commission in the 51st Regiment, he served at Minorca, in the American war, as Brigadier-General in the West Indies (1795), in Ireland during the rebellion of 1798, in Holland in 1799, and in Egypt in 1801. Moore was then regarded as the greatest living British general, and in 1805 he was knighted. In 1808 he was appointed commander-in-chief of the British army in Portugal to operate against Napoleon. He advanced to Salamanca in spite of the gravest difficulties, but was finally compelled to retreat to Corunna, a distance of 200 miles, in face of a superior force. The absence of the fleet to receive his army forced him to a battle against Marshal Soult, in which Moore fell, mortally wounded, in the hour of victory, Jan. 16, 1809.

**Moore, John Bassett**, jurist; born at Smyrna, Del., Dec. 3, 1860. He graduated from the University of Virginia, and became an author and recognized expert on international law, receiving several state appointments.

**Moore, Thomas**, an Irish poet; born in Dublin, Ireland, May 28, 1779. From the school where Sheridan had been educated, he passed in 1794 to Trinity College, and thence, after taking his B. A., in 1799, to the Middle Temple, London. His translation of Anacreon, which came out in 1800, was dedicated to the Prince of Wales, his patron then, but the butt from 1813 of his satire. In 1801 followed the "Poetical Works of the late Thomas Little." In 1803 he was appointed registrar of the Admiralty court at Bermuda. He went there to arrange for a deputy, and after a tour in the United States and in Canada, returned in a year to England. In 1811 he married an actress, Bessy Dyke (1793-1865). In 1817 "Lalla Rookh" appeared. About this time his Bermuda deputy embezzled \$30,000. Moore's liability was reduced by compromise to \$5,000, which he ultimately paid by his pen; but in 1819, to avoid arrest, he went to Italy with Lord John Russell. He returned from abroad in 1822 to Sloperston; and here, except for occasional "junketings" to London, Scotland, and elsewhere, he passed his last 30 years. He died near Devizes, England, Feb. 25, 1852.

**Moorish Architecture**, that form of Saracenic architecture which was developed by the Moslem conquerors of Spain in building their mosques and palaces.

**Moqui Indians**, a semi-civilized people living in seven towns in Northern Arizona. The first accounts of them date from the expedition of Coronado in 1540. Their history is strikingly similar to that of the town-building Indians of the Territory of New Mexico, except that after a successful revolt against the Spaniards, in 1680, they remained independent. They are kind-hearted, hospitable, and cultivate the soil. The houses are built of stone, set in mortar, and for security are perched upon the summits of almost inaccessible mesas. They number about 1,600.

**Moraine**, in physical geography and geology, the debris of rocks brought into valleys by glaciers.

**Moran, Edward**, an American painter; born in Bolton, England, Aug. 19, 1829. He removed to Phila-

delphia in 1844; studied art and first exhibited in 1853. In 1862 he went to Europe, in 1869 took up his residence in New York, but in 1877 settled in Paris. He was noted as a marine painter, but in later years turned to figure painting. He died in New York city, June 9, 1901.

**Moran, Thomas**, an American painter, brother of E. Moran; born in Bolton, England, Jan. 12, 1837. Coming to the United States, he was apprenticed to an engraver at Philadelphia, and commenced painting water-color landscapes in 1856. He visited Europe in 1861. In 1871 he accompanied Prof. F. V. Hayden's expedition to the Yellowstone river, and in 1873 Major Powell's expedition to the Colorado river. As a result of these journeys he painted "F. V. Hayden's expedition to the Yellowstone," and "The Chasm of the Colorado," now in the Capitol at Washington.

**Moravia**, a N. W. province now of republic of Czechoslovakia; area 8,583 square miles; pop. (1926 Est.) 2,910,000. The chief towns are Brunn, Olmutz, Znaim, and Iglau. Moravia possesses a provincial diet with 100 members, and sends 36 deputies to the imperial diets. In 1029 Moravia was united to the kingdom of Bohemia, with which it passed to Austria in 1526.

**Moravians**, a religious sect, called at first Bohemians, and constituting a branch of the Hussites, who, when the Calixtines came to terms with the Council of Basel, in 1433, refused to subscribe the articles of agreement, and constituted themselves into a distinct body. Their tenets were evangelical. In 1522 they made advances to Luther, who partially recognized them, but they ultimately adopted Calvinistic views as to the Lord's Supper. Driven by persecution, they scattered abroad, and for a time their chief settlement was at Fulnek in Moravia, whence they were called Moravian Brethren, or Moravians. On May 26, 1700, was born Nicolaus Ludwig, Count von Zinzendorf, son of the chamberlain and state minister of Augustus II., Elector of Saxony and King of Poland. Having met with a Moravian refugee, who told him of the persecutions to which his sect was exposed in Austria, Count Zinzendorf

offered him and his coreligionists an asylum on his estate. The man, whose name was David, accepted the offer, and in 1722 settled with three other men, at a place called by Zinzendorf Herrnhut (the Lord's guard). Under his fostering care, the sect greatly increased in strength. Till his death, on May 9, 1760, he traveled, largely spreading their views. Though they have never been numerous, yet in the latter part of the 18th century and the beginning of the 19th, they acquired great reputation for having a larger proportion of their membership engaged in foreign missions than any Christian denomination since apostolic times. There are two bodies of Moravians in the United States, with 147 churches and 21,146 communicants.

**Mordvins**, a Finnic race, now, however, greatly intermingled with the Russians, who dwell along the middle course of the Volga, in Nijni-Novgorod and Samara.

**More, Paul Elmer**, an American author; born in St. Louis, Mo., Dec. 12, 1864. He became instructor in Sanskrit and Greek at Bryn Mawr College, and literary editor of the "Independent" and "The Nation."

**More, Sir Thomas**, an English statesman; born in London, England, Feb. 7, 1478. On the accession of Henry VIII. he was made undersheriff of London. In 1514 he was envoy to the Low Countries, soon after was made a privy-councillor, and in 1521 was knighted. In 1523 he became speaker of the House of Commons, and in 1529, succeeded Wolsey in the chancellorship. When Henry began his attacks on the papal supremacy More at once took up the position which his conscience dictated as a supporter of the old system. He was requested to take the oath to maintain the lawfulness of the marriage with Anne Boleyn. His refusal to do so led to his committal to the Tower, trial for misprision of treason, and execution, July 6, 1535.

**Moreau, Jean Victor**, a French general; born in Morlais, France, Aug. 11, 1761. He enlisted when he was 17 years old, and devoted himself to a military career. He was rapidly promoted during the first campaign of the wars of the French Revolution, and

in 1796 he was commander of one of the two French armies that invaded Germany. The other army, which was under General Jourdan, was completely defeated by the Austrians, who then brought their whole force to bear on Moreau. In this emergency, Moreau extricated himself by the retreat through the Black Forest, which is considered a masterpiece of military skill. Napoleon, in 1800, gave Moreau the command of the armies of the Danube and the Rhine. Moreau was afterward suspected of plotting against Napoleon's government and was banished from France. He lived in the United States till 1813, when he returned to Europe and joined the armies of the allied sovereigns against the French. He was mortally wounded at the battle of Dresden, Aug. 27, 1813, and died in Laun, Bohemia, Sept. 20.

**Morelos, Don Jose Maria**, a Mexican patriot; born in Michoacan, Sept. 30, 1765. He was executed Sept. 22, 1815.

**Moreuil**, a small town of N. France, 12 miles S. E. of Amiens, 35 miles S. W. of St. Quentin; has a ruined castle, church, and remains of a Benedictine priory of the 14th century; principal manufactures are hosiery, bricks, and beer; pop. about 3,000.

**Morgan, Daniel**, an American military officer; born in New Jersey, in 1736. He took a prominent part in the expedition under Arnold against Quebec, 1775-1776; was in command of the riflemen at the battle of Saratoga, in 1777; and defeated the British under Tarleton at the Cowpens, S. C., in 1781. He died in Winchester, Va., July 6, 1802.

**Morgan, John Hunt**, an American military officer; born in Huntsville, Ala., June 1, 1825. He became famous as a dashing partisan soldier on the Confederate side during the Civil War. He rose rapidly to the grade of Brigadier-General, and made three successful raids through Kentucky, in 1862, but was captured in 1863, during his great raid through Indiana and Ohio. Escaping from the penitentiary at Columbus he continued active warfare till killed at Greenville, Tenn., Sept. 4, 1864.

**Morgan, John Pierpont**, an American capitalist; born in Hartford,

Conn., April 17, 1837; was educated at the University of Gottingen, Germany. In 1871 he was made a partner of the firm of Drexel, Morgan & Co., which afterward became J. Pierpont Morgan & Co. He became widely known as an organizer of large railroad and industrial interests. In April, 1901, through his firm he created the largest financial concern known, the United States Steel Corporation. Mr. Morgan was a large donor to charitable and educational institutions. He died March 31, 1913. His son, of similar name, born in New York City, in 1867, succeeded his father as head of the firm, which, in the early part of the World War, was the financial agency of the British Government in the United States, and floated large loans to the Allies.

**Morgan, John Tyler**, an American lawyer; born in Tennessee, June 20, 1824. He studied law in Alabama, and was admitted to the bar in 1845; was presidential elector on the Breckinridge ticket in 1860; entered the Confederate service as a private in 1861 and was from time to time promoted for gallant and distinguished services; in November, 1863, was commissioned Brigadier-General, and commanded a division under Gen. Joseph E. Johnston. He was elected to the United States Senate from Alabama in 1877, and was reelected in 1883, 1889, and 1895. He won popularity throughout the country by his able and eloquent speeches in behalf of Cuban independence, and for the maintenance of American interests and the promulgation of American principles in all parts of the world. He was appointed one of the commissioners to represent the interests of the United States in the Board of Arbitration to which was submitted the Bering Sea dispute. He died June 11, 1907.

**Morgan, Lewis Henry**, an American archaeologist; born in Aurora, N. Y., Nov. 21, 1818. He was graduated at Union College in 1840; became a lawyer at Rochester; served in the State assembly (1861) and senate (1868). His earliest work, "The League of the Iroquois" was the first account of the organization and government of an Indian tribe. He died in Rochester, N. Y., Dec. 17, 1881.



**Moriah**, the hill on which the temple of Jerusalem was built.

**Morley, Henry**, an English writer; born in London, England, Sept. 15, 1822. He was educated at King's College; practised medicine in Shropshire and taught in Liverpool; and went to London as a journalist in 1851. His more important works are connected with the history of English Literature. He died May 14, 1894.

**Morley, John, 1st Viscount**, an English statesman; born in Blackburn, England, Dec. 24, 1838. He was educated at Cheltenham College, and afterward proceeded to Lincoln College, Oxford, where he graduated B. A. in 1859, M. A. in 1874. In 1873 he was called to the bar. He began his literary career as editor of "The Literary Gazette," and from 1867 till 1883 he edited the "Fortnightly Review." During 1880-1883 he was editor of the "Pall Mall Gazette," and in 1883-1885 of "Macmillan's Magazine." His political career began in 1869, when he successfully contested Blackburn in the Liberal interest. In 1886 and 1892-1895 he was chief secretary for Ireland; in 1905-1910 Secretary of State for India; in 1908 was created first viscount of Blackburn. He was the author of numerous critical historical and other works. Died, 1923.

**Mormons, or Latter Day Saints**, a religious sect in North America, founded by Joseph Smith, Jr., at Fayette, Seneca co., N. Y., in 1830. In 1823, claiming that he was led by the inspiration of an angel who had appeared to him, he claimed to have discovered golden plates on which the records of Mormon were alleged to be inscribed. These though found in 1823, he was not allowed by the angel to take up till 1827. They were inscribed with characters which were said to be reformed Egyptian but which he was unable to read. There was, however, in the box where they were found, so he declared, a marvelous instrument called Urim and Thumin, by which he was enabled to read the mysterious letters and translate them into English. In 1830 Smith published an English translation of the plates under the title "The Book of Mormon," together with certificates of 11 men who claimed to

have seen the plates. This book tells in a language which imitates the Scriptures how at the time of King Zedekiah of Jerusalem, a pious Israelite by the name of Lehi, together with his family, migrated from Palestine to America and described on these plates the account of his marvelous adventures as well as the revelations which God vouchsafed to him. Many of his sons, like Laman, went out into the wilderness and became the ancestors and chiefs of the North American Indians. The descendants of his son Nephi became good Christians, many centuries before Christ, and among them were preserved the dignity of the priesthood and their sacred plates. To this family also appeared the Christ when He rose from the dead and He chose from the family 12 apostles who within a brief time converted the whole country to Christianity; but when at the beginning of the 4th century the Church, in consequence of wars, became disintegrated, Mormon, a mighty hero and pious Christian, rose and drove out the Lamanites who had in the meantime become red and fallen into barbarism. Nevertheless they returned about the year 400 and the Nephites perished before them. Mormon's son, Moroni, finished the history of his people in 420. The book was published in 1830.

The new prophet immediately began to collect followers about him, and by April 6, 1830, he had organized a church at Fayette, N. Y. The next year the sect numbered several hundred members and moved to Kirtland, O., where they increased in numbers and wealth through the efforts of missionaries who were sent out by the prophet. In 1833 they were driven from Jackson co., Mo., and took refuge in Clay county and the surrounding regions. In 1838, Governor Boggs of Missouri issued an exterminating order against the Latter Day Saints and they were driven out of that State. They went to Illinois, where by 1840 they founded the city of Nauvoo, over which Smith had extraordinary civil and military authority. The city flourished, soon numbering more than 2,100 houses and having a beautiful temple built according to plans which Smith claimed he had received in a vision. In 1844 a discontented mem-



ber of the Church issued a newspaper at Nauvoo assailing the prophet and threatening to expose various immoralities and misdeeds. It was destroyed by the officers of the law. Smith was blamed for this and a warrant was issued for his arrest. Before the civil war actually broke out, the governor of the State induced Smith to surrender and go to Carthage. On June 27, 1844, a mob attacked the jail, overpowered the guard, killed Smith and his brother Hiram and wounded others of the prophet's party. This did not put an end to Mormonism. Smith was succeeded by Brigham Young, who early in 1846, left Nauvoo with others. In the spring of 1847 a company of 143 started through the wilderness and on July 24, arrived at the valley of Salt Lake, which he declared was the promised land. It looked far from being the promised land when they got there. Irrigation was absolutely necessary. The first crop they planted was small and the second nearly destroyed by grasshoppers, but they pushed out into the valley, extending their agricultural operations, and made the wilderness blossom like the rose. They made Salt Lake their place of settlement and Young returned to Council Bluffs, where they had set up temporary headquarters, to bring the rest of the saints to Utah. Their new city became an important place on account of its position on the route of wagon trains to and from California, and owing to the wonderful discipline and management of the Mormons and to their system of irrigation, the wilderness, the soil of which was very fertile and needed only water, began to prove most productive, and the city to flourish. Brigham Young on account of his great influence was named governor of the territory, but in 1854 the government appointed Col. Steptoe as governor, and in 1857 A. Cumming and sent him with 2,500 men to Utah. The expedition met with difficulties on account of the late season of the year and opposition on the part of the Mormons to having an army sent against them. A peace commission was sent to Utah and the people who had already commenced to move away from their homes were induced to return. Young remained governor de facto during the Civil War, 1861-1865. Many missionaries were sent out and the

number of Mormons increased with great rapidity. Young died in 1877 and in 1880 John Taylor was elected president. He had been with Joseph Smith in Nauvoo and was shot and wounded when Smith was killed. He died in 1887 and in the same year was succeeded by Wilfred Woodruff, who was 80 years old, a most remarkable man, who preserved his faculties without impairment even beyond the age of 90. In 1890 he issued his famous manifesto forbidding polygamy. In 1896 Utah became a State and in the following year the 50th anniversary of the entering of the saints into that region, was celebrated. In 1898 President Woodruff died and the apostle Lorenzo Snow succeeded to the presidency of the Church. He also was a very old man, more than 85 years old, a friend of Joseph Smith, and an apostle in Nauvoo since 1849. President Snow died Oct. 10, 1901, and was succeeded by Joseph Fielding Smith, a nephew of Joseph the founder.

The membership of the Mormons is about 250,000 and there are flourishing communities in other countries besides the United States. Mormons express their belief in the Trinity, that men will be punished for their sins, that through the atonement of Christ mankind may be saved by faith, in repentance, in baptism, in the laying on of hands for the gift of the Holy Ghost. One of the characteristics of the Mormons has been a plurality of wives, which was regarded as a means of grace, the number of a man's wives and children increasing the man's chances of honor and glory in the world to come. After 1852 polygamy was preached and practised and the leading men generally were polygamists. In 1862 the Federal government enacted a law against the practice, but little attention was paid to it and not till 20 years later were severer statutes passed against it. In 1884 the constitutionality of the law was established by the supreme court of the United States and more than 1,000 men were convicted and sent to the penitentiary, while many of the leading polygamists fled or went into hiding. In 1887 the Mormon Church was disincorporated by Congress and its immense property was confiscated with the exception of \$50,000. Fi-

nally in September, 1890, after the vast property holdings of the Church had been lost, President Woodruff issued his famous proclamation against polygamous marriages. In 1898 Brigham Henry Roberts was nominated for Congress but owing to a charge made against him that he was still living in polygamous relations, his case was submitted to a special committee which recommended that he be not allowed to take his seat in Congress. Salt Lake City, which is still the principal city of the Mormons is remarkable for its tabernacle, a building completed in 1867, 250 feet long, 150 feet wide, 80 feet high, without any supporting pillars, with a total seating capacity of 7,000. Its great organ and choral services, which are given there regularly by a choir of 600 voices are among the most remarkable features of the Mormon service. Another wonderful building in Salt Lake City is the Temple, which was begun in 1852 and dedicated in 1893.

**Morny, Charles Auguste Louis Joseph, Duc de, a French statesman;** born in Paris, France, Oct. 23, 1811. He is believed to have been the son of Queen Hortense and of the Comte de Flahault and half-brother of Louis Napoleon. Adopted by the Comte de Morny, he entered the army in 1832, and served with some distinction in Algeria; but he soon abandoned a military life, and in 1838 made his debut in the world of industry as a manufacturer of beet-root sugar. After the revolution of 1848 he became attached to the cause of his half-brother, and was the leader of the subtle and treasonable policy of the Elysee. He took a prominent part in the coup d'etat, and became minister of the interior. In 1854-1856, and again in 1857-1865, he was president of the Corps Legislatif, and was ambassador to Russia during 1856-1857, where he married the rich and handsome Princess Trubetskoi. He died in Paris, March 10, 1865.

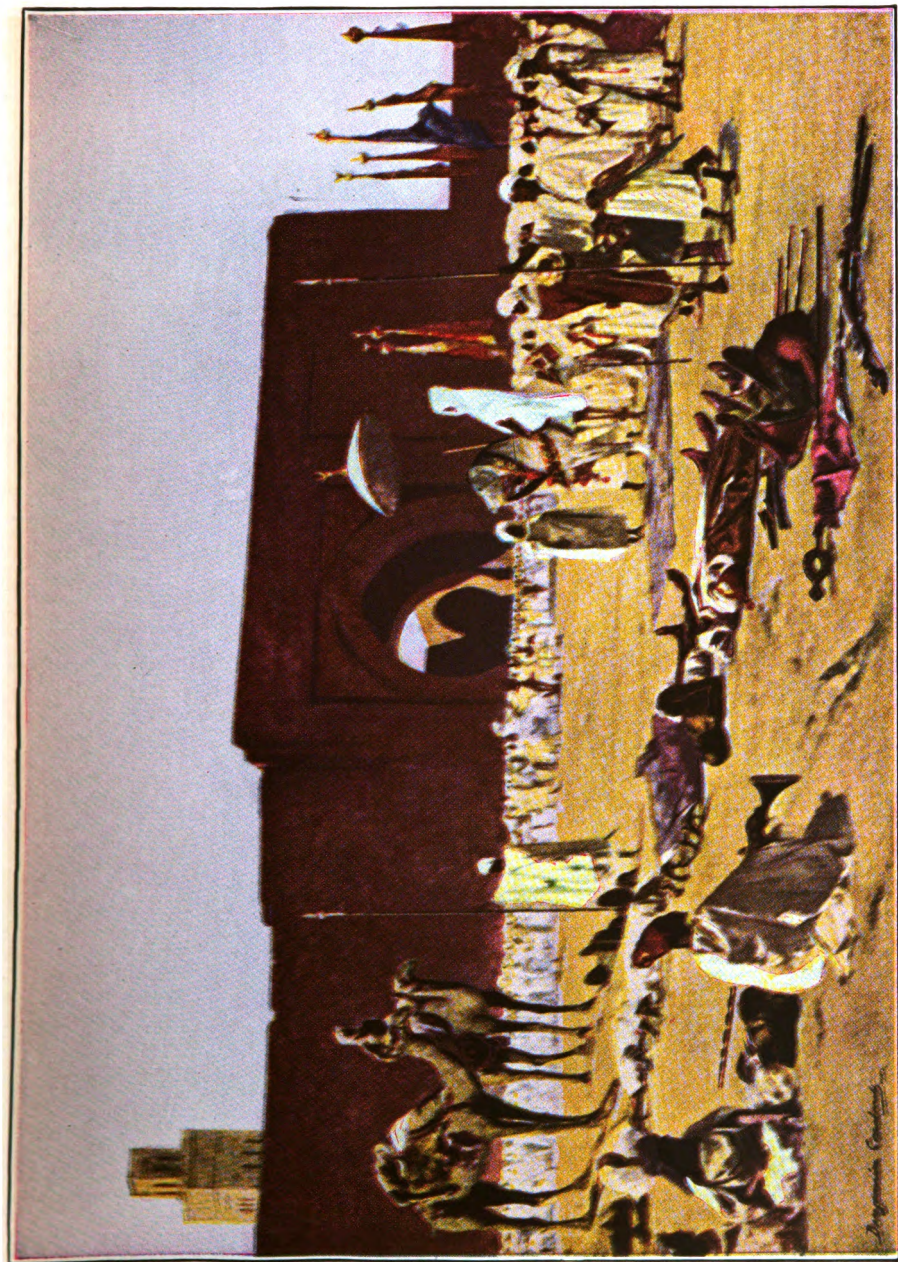
**Morocco, or Marocco, known to the natives as Maghreb-el-Aksa, "the farthest West,"** is an empire or sultanate which is confined to that part of Northwest Africa bounded on the E. (at the Wadi Kiss) by Algeria, and on the S. by Cape Nun and the Wadi Draa, though both here and on the

Sahara side of the Atlas the limits of the empire are rather indeterminate. Area, about 219,000 square miles; pop. estimated at 6,000,000.

Morocco produces crops of the temperate and tropical zones. Wheat and barley are grown largely. Various gums, oranges, figs, almonds, lemons, and dates are among the other vegetable products. Cotton and hemp are grown for home consumption. Most European fruits grow well, and among other products sugar has been raised. Cattle are exported; but no animals can be sent out of the country without an imperial permit.

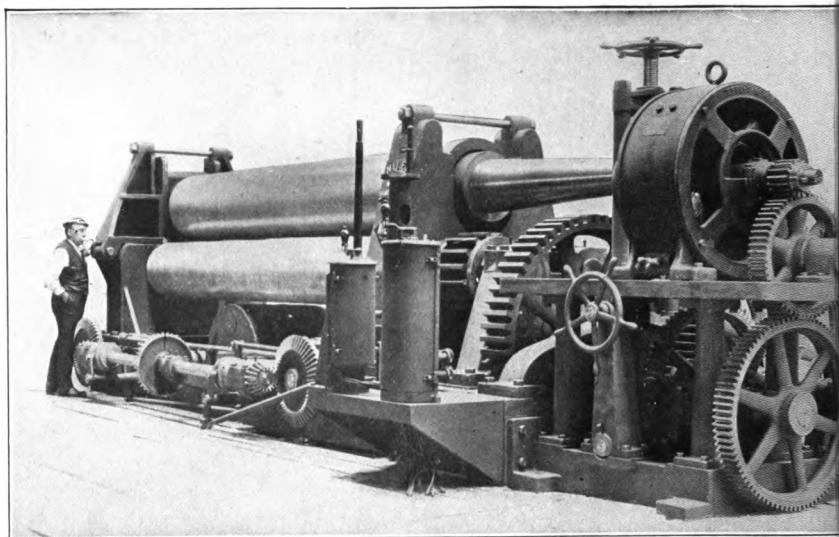
The inhabitants consist of six principal groups. (1) The Berbers or Kabyles, of whom the Amazigh, Sheluh, and Tuareg are only branches, are the aborigines. They inhabit for the most part the mountain regions, and are still only half subdued. (2) The Arabs are descendants of the invaders who came in the 7th century. (3) The Jews were very early settlers, semi-independent colonies still subsisting in the Atlas and the Sus country, though most of them in the towns are refugees driven out of Spain and Portugal. (4) A few thousands of Europeans, chiefly Spaniards, are almost entirely confined to the coast towns. (5) The "Moors," a term vaguely applied to all the Mohammedan inhabitants, are really Arabs with a large admixture of Spanish and other European bloods. (6) The Negroes, of whom there are large numbers, were brought from the Sudan as slaves.

The Sultan is one of the most perfect specimens of an absolute monarch existing. Christian slavery and piracy were prohibited, 1814-17, but piracy has often caused trouble with European powers. In 1893 there was war with Spain, and in 1904 the capture by brigands of an American and Englishman led to naval demonstrations. The Moroccan Franco-German embargo 1905-06 was settled by the Algeiras Conference Apr. 7, 1906. In July, 1911, the German Government sent a cruiser to Agadir, informing the Sultan and the European Powers that the object was to protect German interests. This action resulted in agreements between France and Germany under which the latter re-

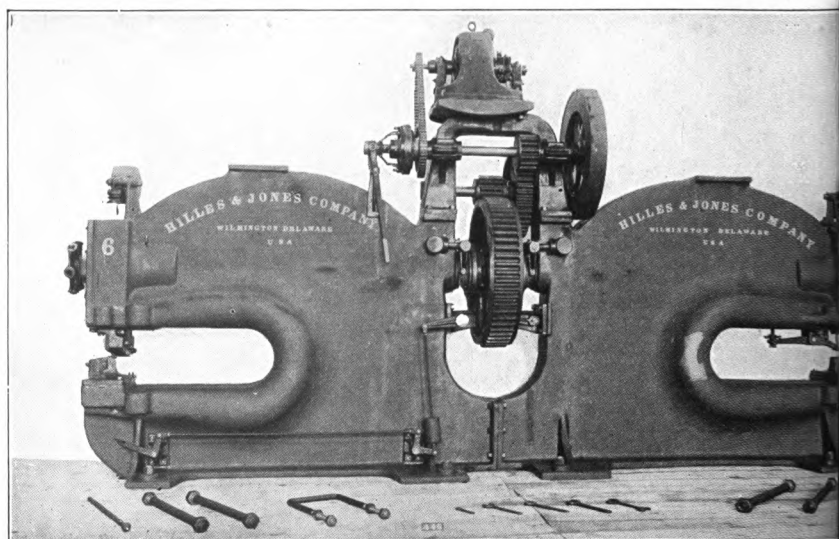


THE LAST OF THE REBELS



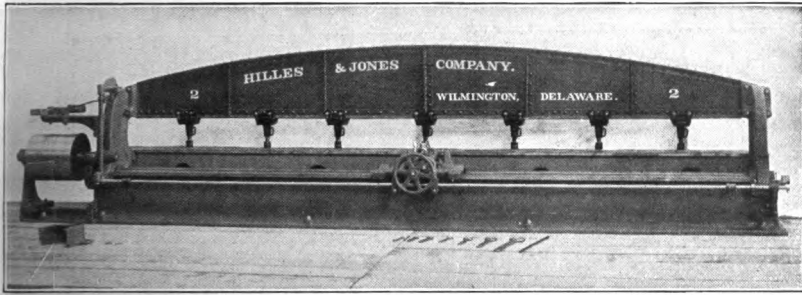


BENDING ROLLS

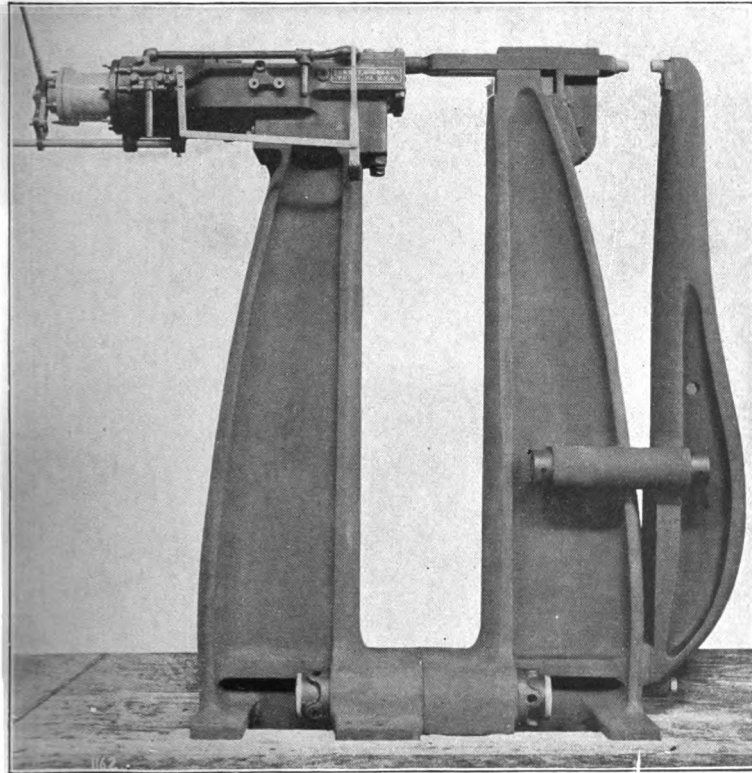


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PLANER



RIVETING MACHINE

KING MACHINERY



THE GATE OF A FONDAK IN FEZ—MOROCCO



nounced all political interests in Morocco, and assented to the establishment of a French protectorate. In the following year the Sultan accepted the arrangement.

**Morocco** (Arabian, Marakesch, by which name it is usually known among European residents), the S. capital of the empire of the same name; between 4 and 5 miles from the left bank of the Tensift, at the N. end of an extensive and fertile plain; 1,447 feet above the sea. It is surrounded by a lime and earth wall, more than 5 miles in circumference, between 20 and 30 feet high, and pierced by seven gates. Morocco possesses many mosques one of which, the Kutubia, has a tower after the model of the Hassan in Rabat and the Giralda in Seville, 320 feet high. The population varies according to the presence or absence of the Sultan, his court, and army. Morocco was founded in 1072 by the Emir Jusef ben Tachefyn, and reached the summit of its prosperity in the 13th century. In those days it is affirmed to have contained more than 700,000 inhabitants.

**Moreni, Giovanni Battista**, an Italian painter; born in Albino, near Bergamo, about 1510. Of the North Italians, Moreni ranks next to Titian, who greatly admired his portraits. He died Feb. 5, 1578.

**Morpheus**, in classical mythology, a minister of the god Somnus. He is sometimes called the god of sleep.

**Morphine**, or **Morphia**, the most important of the opium bases, discovered by Serturner in 1816. It is used to allay pain and is commonly used in hypodermic injections.

**Morphology**, that branch of natural science which treats of the laws, form, and arrangement of the structures of animals and plants, treating of their varieties, homologies and metamorphoses; the science of form.

**Morphy, Paul Charles**, an American chess-player; born in New Orleans, La., June 22, 1837. He was distinguished as being probably the most skillful chess-player that ever lived. He died in New Orleans, July 10, 1884.

**Morrill, Justin Smith**, an American legislator; long popularly known as "The Father of the Senate"; born

in Strafford, Vt., April 14, 1810; in early life was a merchant; in 1848 retired from business to take up farming; in 1854 was elected to Congress as a Whig, and was reelected five times. He prepared the tariff bill named after him, which has been, to a great extent, the model for all protective legislation. He was elected to the United States Senate in 1866 and was continuously a member of that body till his death, when he was the oldest member of the Senate and had been in continuous congressional service for 43 years. He died in Washington, D. C., Dec. 28, 1898.

**Merrill, Lot Myrick**, an American politician; born in Belgrade, Me., May 3, 1813; was governor of Maine in 1858-1860; United States Senator from that State in 1861-1876; and Secretary of the Treasury in 1876-1877. He died in Augusta, Me., Jan. 10, 1883.

**Morris, Clara**, an American actress; born in Toronto, Canada, in 1849; was taken to Cleveland, O., when an infant. She achieved prominence in emotional roles, and afterward made many tours throughout the United States.

**Morris, George Pope**, an American journalist; born in Philadelphia, Pa., Oct. 10, 1802. He died in New York city, July 6, 1864.

**Morris, George Sylvester**, an American writer on philosophy; born in Norwich, Vt., in 1840. He died in 1889.

**Morris, Gouverneur**, an American statesman; born in Morrisania, N. Y., Jan. 31, 1752. He was member of the Continental Congress; of the committee that drafted the Constitution; minister to France, 1792-1794; United States Senator from New York, 1800-1803. He died in Morrisania, Nov. 6, 1816.

**Morris, Harrison Smith**, an American poet; born in Philadelphia, Pa., Oct. 4, 1856; was editor of "Lippincott's Magazine" in 1899-1905.

**Morris, Robert**, an American financier, and a signer of the Declaration of Independence; born in Lancashire, England, Jan. 20, 1734. Coming to America at an early age, he embarked in mercantile business in Philadelphia, and rapidly acquired

wealth. On the outbreak of the Revolution, he took a prominent part in upholding the National cause. In 1775, he was elected to Congress, and in 1781 appointed Superintendent of Finance. He died in Philadelphia, Pa., May 8, 1806.

**Morris, William**, an English poet; born in Walthamstow, Essex, England, March 24, 1834. He was graduated at Oxford. He was a leader of the socialistic movement in Great Britain. He died in Hammersmith, England, Oct. 3, 1896.

**Morris Island**, a small island at the S. entrance to Charleston Harbor, S. C. During the Civil War it was occupied by Fort Wagner and other fortifications.

**Morrison, Robert**, an English missionary; born in Morpeth, England, Jan. 5, 1782. In 1807 he went out as a missionary for Canton. In 1814, having completed the issue of the New Testament in Chinese, he commenced, with the assistance of Dr. Milne, who had joined him in 1813, the translation of the Old Testament. Died in Canton, China, Aug. 1, 1834.

**Morrison, William Ralls**, an American legislator; born in Monroe co., Ill., Sept. 14, 1825; was educated at McKendree College; served in the Mexican War as a private; from 1852 to 1854 was clerk of the Circuit Court of Monroe county; in 1855 was admitted to the bar, and from 1854 to 1860 was a member of the Illinois House of Representatives, serving as speaker the last two years. During the Civil War he served in the Union army. He was elected to the 38th Congress; was defeated for reelection, in 1870 and 1871 again served in the Legislature; in 1872 was elected to the 43d Congress, and served continually from Dec. 1, 1873, till March 3, 1887; was an Interstate Commerce Commissioner in 1887-1897, and chairman in 1891-1897. Died Sept. 29, 1909.

**Morrisonians**, a religious body known also as the Evangelical Union, which was formed in Scotland in 1843. Their founder, the Rev. James Morrison, of Kilmarnock, was ejected from the United Secession Church for holding views contrary to the standards of that body. Mr. Morrison was soon after joined by several other minis-

ters of the United Secession Church, and also by several of the Independents.

**Morrison, Harry Steele**, author and lecturer; born Mattoon, Ill., Nov. 26, 1880; at 16 he started for Europe with only \$25, working his way from place to place, and interviewing many notable persons. Has since made several trips to Europe and one trip entirely around the world. Mr. Morrison, as "the Boy Traveler," lectured in America and England.

**Morristown**, town and capital of Morris county, N. J.; on the Lackawanna and other railroads; 30 miles N. W. of New York city; is a beautiful residential place on an elevated site surrounded by attractive hills; is historically noted as having twice been the headquarters of Washington during the Revolutionary War; contains the headquarters building filled with relics of that period, the remains of Fort Mifflin, built by Washington in the winter to keep his army from mutiny, and marked by a memorial monument, Memorial and All Souls' hospitals, and several academies and seminaries. On Morris Plains, 4 miles distant, is a State Lunatic Asylum that is known far and wide. Pop. (1930) 15,197.

**Morro Castle**, a Spanish fort at the entrance to the harbor of Havana, Cuba; its dungeons are said to have been the prisons of many convicted of political offenses. Also an imposing fortification on the cliffs overlooking Santiago Bay, Cuba. It was in sight of this fort and under fire of its guns that Lieutenant Hobson and seven men of the United States navy, on June 3, 1898, sank the "Merrimac" at the entrance to the harbor to prevent the Spanish fleet from escaping. On their capture, while attempting to regain their vessels, the men were imprisoned for some time in Morro, but were well treated by the Spaniards and subsequently exchanged.

**Morse, Edward Sylvester**, an American zoölogist, born in Portland, Me., June 18, 1838. He founded the Peabody Academy of Sciences, Salem, Mass., being its curator and president after 1881; was Professor at Bowdoin College; Professor at the Imperial University, Tokio, Japan, etc.

**Morse, John Torrey**, an American biographer; born in Boston, Mass., Jan. 9, 1840; was graduated at Harvard College in 1860; coeditor with Henry Cabot Lodge of the "International Review"; editor of the "American Statesmen Series." He began life as a lawyer in Boston, Mass.

**Morse, Mrs. Lucy (Gibbons)**, an American novelist; born in New York in 1839.

**Morse, Samuel Finley Breese**, an American inventor; born in Charlestown, Mass., April 27, 1791. He graduated at the Yale College; became a successful artist; and studied chemistry and natural philosophy. In 1829 he went to Europe for three years, and during the return voyage worked out roughly a plan for employing electro-magnetism in telegraphy. It was not till 1835 that he was able to exhibit an instrument that was found to work well. By July, 1837, this instrument was perfected, and ultimately in 1843 Congress granted him means to construct an experimental line between Washington and Baltimore. From that time Morse's instrument came into general use in the United States and Europe. In 1857 the representatives of 10 countries met at Paris, and voted him \$80,000. He died in New York city, April 2, 1872.

**Mortality, Law of**, the statement of the average proportion of the number of persons who die in any assigned period of life or interval of age, out of a given number who enter on the same interval, and consequently the proportion of those who survive.

**Mortar**, or **Mortex**, a vessel, generally in the form of a bell or conical frustum, in which substances are pounded by a pestle. Also a calcareous cement. Short pieces of ordnance used to force shells at high angles, generally 45°, the charge varying with the range required.

**Mortara, Edgar**, a Jewish boy who, on June 22, 1858, was forcibly carried off from his parents by the orders of the Archbishop of Bologna, on the plea that he had, when an infant, been baptized into Christianity by a Roman Catholic maid-servant. The manner of the boy's abduction, and the

refusal of the Roman Catholic authorities to give him up to his parents, becoming known throughout Europe, excited great indignation. But the boy remained in the hands of the Roman Catholic Church, and became an Augustinian monk.

**Mortgage**, in law, the conveyance of property as security for the payment of a debt or performance of a promise, and on the condition that if the debt be duly paid or the promises fulfilled the conveyance shall be void.

**Mortification**, the complete death of part of the body. It is generally the result of acute inflammation, but may be also an idiopathic disease.

**Morton, Levi Parsons**, an American financier; born in Shoreham, Vt., May 16, 1824. His father was the Rev. Daniel Morton. He showed an early preference for business pursuits, and at the age of 16 entered a country store. In 1849 he went to Boston, and, though possessed of little capital, was admitted as a partner in a prominent mercantile firm; five years later he removed to New York, and in 1863 established the banking house of Morton, Bliss & Co., with a branch in London under the name of Morton, Rose & Co. He was member of Congress 1879-81; U. S. minister to France 1881-85; Vice-President of the United States under President Benjamin Harrison 1889-93; and Governor of New York 1894-96. Died, 1920.

**Morton, Oliver Perry**, statesman; born Aug. 4, 1823, Wayne Co., Ind. He became a lawyer in 1847; governor of Indiana 1861; conspicuous for his loyalty during the Civil War; U. S. Senator 1867-77; and died at Indianapolis, Ind., Nov. 1, 1877.

**Morton, Paul**, ex-U. S. secretary of the navy; born May 22, 1857, at Detroit, Mich. He received a public school education and in 1872 became a railroad clerk. From 1890-96 he engaged in the coal business, then reentered railroad service and in 1898 became 2d vice-pres. of the Atchison, Topeka and Santa Fé R. R. In 1904-05 he was secretary of the navy; then president of the Equitable Life Assurance Society. He died Jan. 19, 1911.

**Morton, Samuel George**, an American naturalist; born in Philadelphia, Pa., Jan. 26, 1799; studied

## Morton

medicine there and in Edinburgh, and in 1839 was appointed Professor of Anatomy in the Pennsylvania Medical College. Morton may be regarded as the first American who endeavored to place the doctrine of the original diversity of mankind on a scientific basis. He died in Philadelphia, Pa., May 15, 1851.

**Morton, Sarah Wentworth (Apthorpe)**, an American poet; born in Braintree, Mass., Aug. 29, 1759. Died in Quincy, Mass., May 14, 1846.

**Morton, William Thomas Green**, an American dental surgeon, and the reputed discoverer of anæsthetics; born in Charlton, Mass., in 1819. In 1840 he commenced the study of dentistry in Baltimore, and two years later began to practise in Boston. In 1844, in the latter city, while engaged in experimental study, he discovered and introduced ethereal anæsthesia. It was first publicly tested on Oct. 16, 1846. He died in New York city, July 15, 1868.

**Mosaic**, a term applied to any work which exhibits a representation on a plane surface by the joining together of minute pieces of hard, colored substances, such as marble, glass, or natural stones united by cement (mastic), and serving as floors, walls, and the ornamental coverings of columns. Mosaic work is of Asiatic origin.

**Mosasauros**, in palæontology, a gigantic marine lizard, now extinct. It is believed to have been at least 25 feet long.

**Mosby, John Singleton**, an American military officer; born in Powhatan co., Va., Dec. 6, 1833; was graduated at the University of Virginia, and became a lawyer. On the outbreak of the Civil War, he entered the Confederate service. In 1862-1865 he was colonel of the "Partisan Rangers," an independent cavalry command that did very effective work in cutting National communications, destroying supply trains, capturing outposts, etc. After the war he practised law at Warrentown, Va.; was United States consul at Hong Kong in 1875-1885; afterward practised law in San Francisco. He died May 30, 1916.

**Moscow** (Russian, Moskwa), made the second capital of the Russian republic, March 14, 1918. It is the chief town of

## Moscow

the government of the same name and is situated in a highly-cultivated district on the Moskwa river, 400 miles S. E. of Leningrad, with which it is in direct communication by rail. The quarter known as the Kreml or Kremlin, on a height about 100 feet above the river, forms the center of the town, and contains the principal buildings. It is inclosed by a high stone wall, and contains the old palace of the czars and several other palaces; the Cathedral of the Assumption, founded in 1326, rebuilt in 1472; the Church of the Annunciation, in which the emperors are recrowned; the Cathedral of St. Michael; the Palace of Arms, an immense building occupied by the senate, the

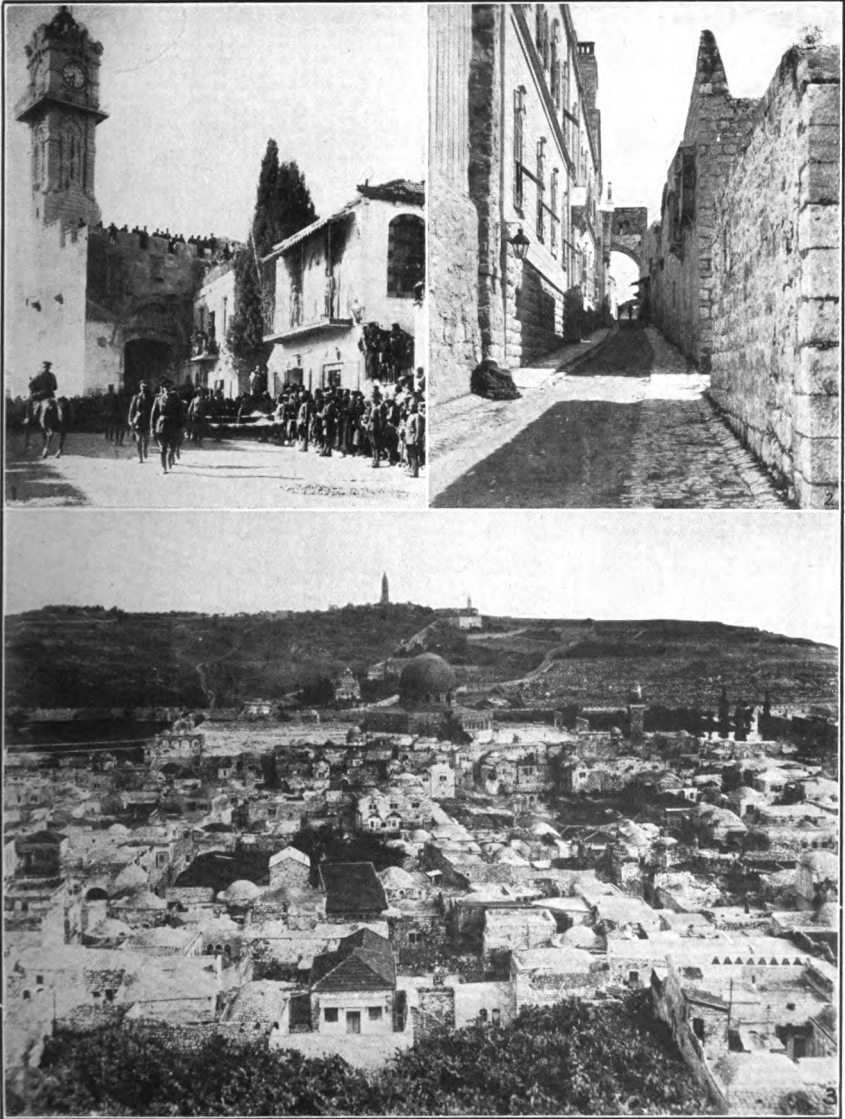


MOSCOW MUSEUM.

treasury and the arsenal; and the Tower of Ivan Veliki (209 feet), surmounted by a gilded dome, and having at its foot the great Czar Kolokol, or king of bells, 60 feet round the rim, 19 feet high, and weighing upward of 192 tons, the largest in the world. Outside the Kreml the chief building is the Cathedral of St. Vassili, with no less than 20 gilded and painted domes and towers, all of different shapes and sizes. Among the principal educational establishments is the Imperial University, founded in 1755 by the Empress Catharine. It has a rich mu-

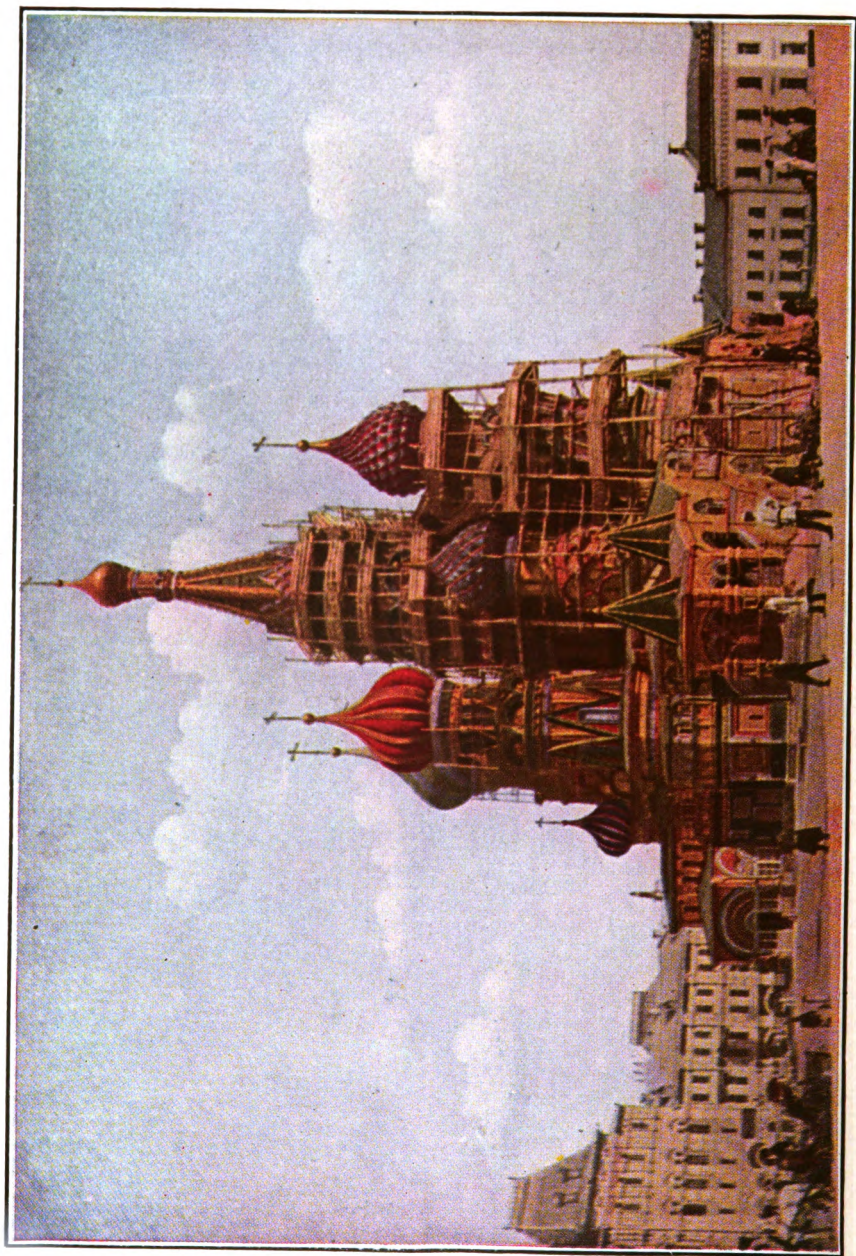


## THE JERUSALEM OF TODAY



- 1—Entry of the British General Allenby into Jerusalem.
- 2—Street of Sorrows, through which Christ bore the Cross.
- 3—General view of Jerusalem.

Photos by Brown Bros.



CATHEDRAL OF ST. VASSILI, MOSCOW



## Moses

seum and a library of 200,000 volumes, and is the most important of the Russian universities. The foundation of the city dates from 1147. It became the capital of Muscovy, and afterward of the whole Russian empire; but was deprived of this honor in 1703, when St. Petersburg was founded. The principal event in the history of Moscow is the burning of it in 1812 for the purpose of dislodging the French from their winter quarters. The Emperor Nicholas II. and Empress Alexandra observed the ceremony of coronation in the Grand Kremlin in Moscow on May 26, 1896. The festivities were of unparalleled splendor and lasted for three weeks. Population, (1926) 2,019,453.

**Moses** (Egyptian mo, water, and use, saved), the son of Amram and Jochebed of the tribe of Levi. Hidden in the bulrushes by the Nile, by his mother, to save him from the decree that every male Israelite babe should be killed, he was found, brought up, and educated by Pharaoh's daughter. In his 40th year he fled to the wilderness where he became a shepherd for 40 years, and then by Divine command, returned to Egypt to lead his people out of the land of bondage. Owing to their sins they wandered in the wilderness for 40 years, until the generation of transgressors had died. Moses saw the land of Canaan from Mt. Pisgah, where he died in his 120th year. He was the author of Pentateuch, and the Ten Commandments given through him, and many of the Mosaic laws, from the basis of all moral and legal codes.

**Mosely Commission**, a commission composed of 23 secretaries of the leading trades-unions of Great Britain, who visited the United States in the fall of 1903 to study manufacturing, industrial, and commercial conditions, which in international competition, had seriously affected the commerce and free trade policy of Great Britain. It was organized and financed by Alfred Mosely, a retired South African diamond merchant and philanthropist, who concluded that these secretaries would be in better position than anyone else to impart the results of their visit, and the conclusions they arrived at, to their various unions. During an extensive

## Mosquito Coast

circular tour every opportunity was afforded for inspecting some of the largest factories in the States. Mr. Mosely supplied a list of questions as a guide for investigations which were grouped under four headings: (1) Early training of the workers; (2) General condition of workers outside the factory; (3) Relations between employers and employed; (4) General questions which related mainly to the Civic Federation of the United States, and the desirability of establishing such an organization in England. Some of the conclusions arrived at were: The American workman for 2½ days' work, receives remuneration equal to that of the British for a week; the American is more temperate than the British; he lives longer; is more thrifty, and after a few years frequently retires with his savings to an easier occupation, usually farming or market-gardening. Labor saving machines were more in evidence in America than in the United Kingdom; but, there was a considerable difference of opinion among the various delegates as to what could be learned from America, in their respective trades,—for instance,—ship-building in England being considered superior to that of America. To the questions "Are there greater opportunities for the workman to rise in America than in England?" and "Should Great Britain have a Civic Federation to bring arbitration to bear on differences between capital and labor?" the answers received were "Yes!" Mr. Mosely died July 22, 1917.

**Mosquito**, the popular name of various two-winged insects, having a large proboscis, with which they attack human beings, sucking blood and propagating malaria (q. v.). Mosquitoes abound in many parts of America and also in the tropical parts of the Eastern World, and are troublesome in the Polar regions. Various plans for their extermination have been devised, but without apparent result.

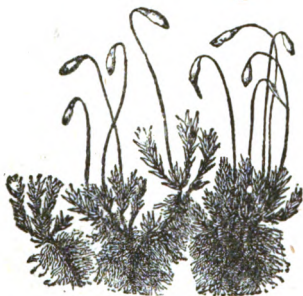
**Mosquito Coast, or Reserve**, a maritime tract of Nicaragua, having E. the Caribbean Sea, and S. the river San Juan, which separates it from Costa Rica. The river Segovia, which enters the Caribbean Sea near Cape Gracias a Dios, is the boundary

## Mosquito Fleet

with Honduras. Next the sea, the surface is low and broken by numerous lagoons, but gradually rises toward the interior. Mosquito Coast is inhabited by people of mixed Indian and African race. Mosquito Coast was discovered by Columbus in 1502, and appropriated by Spain. From 1655 to 1850 it was an English protectorate, but in 1860 was made over to Nicaragua. After being for some time under the protectorate of Great Britain the Reserve was reincorporated with the territory of Nicaragua and named the Department of Zelaya, Nov. 20, 1894.

**Mosquito Fleet**, a term given to what is known among naval men as "the second line of defense." It is used in protecting the fortifications and harbors along the coast line, and, like the insect for which it is named, annoys the enemy in every way, at the same time preventing the possibility of a blockade. A fleet of this kind was organized during the Spanish-American War in 1898. For convenience the coast from the Canada line to Key West, and from there around the Gulf of Mexico to Rio Grande, was divided into eight districts, and each district was patrolled day and night by vessels in their turn.

**Mosses**, a class of small flowerless plants, important in the economy of nature, and of great interest in their



MOSS.

life history. They are found in all climates, but are most abundant in temperate regions and in damp places.

## Mother-of-pearl

**Moth**, the popular name of a numerous and beautiful division of lepidopterous insects, readily distinguished from butterflies by their antennæ varying in form to a point instead of terminating in a knob, by their wings being horizontal when resting, and by their being seldom seen on the wing except in the evening or at night. Moths are comparatively larger than butterflies and more hairy or downy in character. There are thousands of species, differing greatly in color, form, size, habit and diet. The giant owl moth of Brazil measures nearly a foot from tip to tip, and there is a gilded species smaller than a pin's head. Some moths are destitute of tongues and pass through the winged state without food. One species of moth, the silk worm, has long been serviceable to man. Other species make very large cocoons of silk capable of producing a fabric more durable than the silk of commerce.



MOSS.

**Mother Carey's Chicken**, a name familiarly given by sailors to the stormy petrel and other small oceanic species of petrel. The name Mother Carey is a corruption of the "Mater Cara"—dear mother—of Levantine sailors. See PETREL.

**Mother-of-Pearl**, in zoölogy and commerce, the internal layer of oyster and other naacreous or pearly shells. It is of silvery brilliance and iridescent. This is due to the alternate

## Mother of Presidents

layers of carbonate of lime and membrane.

**Mother of Presidents**, a name given to Virginia because that State has given eight chief executives to the Union, namely: Washington, Jefferson, Madison, Monroe, W. H. Harrison, Tyler, Taylor, and Wilson.

**Mother of States**, a name given to Virginia, from the fact that out of the original Colony of Virginia were formed Kentucky, Ohio, Indiana, Illinois, and West Virginia.

**Motherwort**, a labiate plant, three feet high, flowers in crowded whorls, white with a reddish tinge, found in some parts of North America.

**Motion, Laws of**, three principles or axioms which were laid down by Sir Isaac Newton:

(1) If a body be started in motion, and if no force act upon it, that body will continue in motion in the same direction, and with the same velocity.

(2) Change of motion is proportioned to the acting force, and takes place in the direction of the straight line in which the force acts.

(3) To every action there is always an equal and contrary reaction; or, the mutual actions of any two bodies are always equal and oppositely directed in the same straight line.

**Motion Pictures**, a method of representing upon a screen a series of photographs of objects in motion, made on a ribbon-like film of celluloid, by means of an apparatus containing a mechanism for alternately exposing and moving the film, with a shutter for cutting off the light between the consecutive pictures or "frames." The average film or "reel" as it is known in the parlance of the trade is about 1,000 feet in length, and the pictures are three-quarters of an inch high, and one inch wide. The standard aperture on the projection machine is eleven-sixteenths of an inch high and fifteen-sixteenths of an inch wide.

While many attempts were made from the first of the nineteenth century on to present consecutive pictures in motion, it was not until 1877 that Eadweard Muybridge in America made a series of photographs of a horse in motion. This he accomplished by placing at intervals around a race track, a battery of cameras, the shutters of which were operated by a string

## Motion Pictures

which was broken when the horse struck it. While these attempts did not succeed in actually presenting a continuous action, they did arouse much interest and settle disputes that had raged for years among antagonists and artists as to the actual position attained by a horse in motion.

The first practical machine for taking and presenting "continued" action was invented by Edison in 1893 and was improved and varied by Lumiere, Paul and others.

The pictures are taken at an average speed of from sixteen to twenty per second—sixteen being the preferred speed. To show them at a slower speed causes a "flicker" and consequent eye-fatigue to the spectator. The principal by which the illusion of motion is obtained is simple, and is based on the peculiar optical condition known as "persistence of vision," viz.: when the retina receives an impression it lasts for a short interval, it is during this interval that the "black space" caused by the shutter in the projecting machine cutting off the light from the screen, occurs. The image from the previous "frame" is carried over and before it is eliminated the new "frame" appears and so the illusion of action is created.

From the nickelodeon of 1902, which was regarded as a freak, a new toy, to the gilded cinema palaces of today, is a roadway bearing as milestones many illustrious names that have made the industry the third largest financially in America today. Up to 1915 the average motion picture was of one or two-reel length, but David Wark Griffith proved, when he produced the never-to-be-forgotten "Birth of a Nation" that the multiple-reel picture had come to stay, that a full evening's entertainment could be provided by motion pictures, and that people would pay as much to see a good "movie" as they would a good stage play. Shortly after this came the serial, a picture of some twenty or thirty reel length, which would be shown two reels at a time, from week to week. The subject matter of these serials as a rule was not intended to appeal to the literati, generally consisting of the daring and thrilling deeds of some hero whose double could only be found in the wildest of the

"Nick Carter" and other "dime-novel" tales. They are, by the way, still a drawing card at the smaller theaters as a Saturday afternoon attraction for Young America, who derives the same pleasure from watching the hair-breadth escape of their favorite hero or heroine (of whom Pearl White, now several times a millionaire, was the first and perhaps the greatest) snatched from the toils of the villain at the crucial moment, as did their sires and grandsires in reading the escapades of the paper-backed novel.

Once a precedent was established, once a character or type of story found public favor, scores of imitations and replicas sprung up. Mary Pickford, America's Sweetheart, as she is called, set the style for the golden curled, wide-eyed ingenious heroine, William S. Hart for the cow-boy "bad-man," Douglas Fairbanks for the athletic hero, Theda Bara, in a version of Kipling's "A Fool There Was" was the fore-runner of all screen "vamps," and Charles Chaplin, with his spot of moustache and funny walk, led all screen comedians. George Loane produced "The Miracle Man" and it has been followed by hundreds of photo-plays with a religious theme. Humoresque was the mother of all "mother-love" pictures, and Griffith's "Intolerance" was the fore-runner of the "symbolic" pictures.

Directors have come and gone, but a few of the old guard remain. William and Cecil De Mille, who came from the legitimate stage, and who after many years of successful playing and directing finally became independent producers. It was Cecil De Mille who first realized the value of expensive looking sets and lavishly costumed productions, and in his production of "Male and Female" and adaptation of Barrie's "The Admirable Crichton" changed considerable of the standards of public taste. Mack Sennett, the humorous little Irishman, who made the first rough-house comedies, who made the "bathing-girl" and the comedian's thrown custard-pie famous, and who developed more dramatic stars of the screen than any other director or producer, not even excepting the great Griffith himself, who still remains the dean of them all. David Wark Griffith, whose pictures already mentioned, and whose "Broken

Blossoms," a wistful adaptation of Thomas Burke's story of Limehouse, "The Chick and the Child," has been acclaimed by the critics to be the greatest photoplay of all time. Griffith is credited with having developed the present flexible screen technique, including the "flashback" and the "close-up."

Several years ago some noted German directors were imported, and with them came many new ideas. Von Stroheim, Lubitsch, Murnau, and others gave to American pictures impressionistic and futuristic settings, and lent to the screen a sort of fourth dimension. While their ideas were not accepted as a whole, there can be no doubt but what their advent left a distinct impression upon the industry, and much of their technique modified in one way or another is used universally today. The most outstanding of the early pictures of this school were "The Golem" and "The Cabinet of Dr. Caligari."

Aside from their entertainment value, motion pictures have come into widespread use for educational purposes. Among the many examples: as a means of teaching history in both elementary and advanced schools, to instruct workers in various trades and professions, by scientists to make permanent records of the growth of various forms of animal, plant and bacterial life, by military authorities to study ballistics, by social and civic organizations to give lessons in hygiene, the preparation of foods, child welfare, recreation, etc. Large industrial organizations have realized their value as a means of advertising, food companies particularly sending lecturers out into the field showing the development of the commodity from the raw state into the finish product.

With the development of the "sound" and "talking" motion picture even greater possibilities for both entertainment and education have been created. By means of various apparatus dialogue spoken by the players or music played incidentally is synchronized with the actual pictures and when they are projected a very perfect reproduction of the original is obtained. From an educational standpoint this new development will prove invaluable, for thru it the world's greatest musicians,



singers, and actors can be heard as well as seen simultaneously all over the world.

The subject matter of the motion pictures, both silent and sound that are presented to the public is controlled by a Commission, or Board of Censors, of which William Hays is the head. Practically every State has its own separate board, and many of the cities also have one composed of citizens of the community who pass upon the picture before it is presented to the public, and by whose decision the exhibitors agree to stand.

Many costly and beautiful theaters given exclusively to the showing of motion pictures have been built in the last few years, several costing well over the million mark.

**Motley, John Lothrop**, an American historian; born in Dorchester, Mass., April 15, 1814; was educated at Harvard University and Göttingen, Germany; entered political life as a member of the Massachusetts House of Representatives. He published, after 10 years' labor and a journey to Europe, his great "History of the Rise of the Dutch Republic" in 1856, a work which was further developed in the "History of the United Netherlands." He was minister from the United States to Austria, and to Great Britain. He died in Dorchester, England, May 29, 1877.

**Motmot**, the Mexican name of a bird resembling the bee-eaters. They are solitary birds, or living in pairs among the gloomy forests of the neotropical region. Their ordinary food is small reptiles, insects, and fruits.

**Motor Cycle**, a motorized bicycle, its general build resembles the bicycle but it is of heavier frame to withstand the weight of the motor and speed at which it is driven. Motor is gasoline, controlling apparatus on the handlebars, braking mechanism in the pedals located on either side of the machine. Some motor cycles are used for commercial delivery purposes, others for passengers, the seats being in tandem. Speed in excess of 100 mi. per hr. can be obtained.

**Mott, Lucretia (Coffin)**, a reformer; born in Nantucket, Mass., Jan. 3, 1793. She was educated in the school where James Mott, whom

she subsequently married, was a teacher, and early became interested in the movement against slavery. In 1818 she joined the Friends. In 1833 she assisted in the formation of the American Anti-Slavery Society, and in 1840 went to London as its delegate to the World's Anti-Slavery Convention. She was one of the four promoters of the Woman's Rights Convention in the United States, and was an active exponent of the cause of equal suffrage. She died in Philadelphia, Pa., Nov. 11, 1880.

**Mott, Valentine**, an American surgeon; born in Glen Cove, Long Island, N. Y., Aug. 20, 1785; studied in London and Edinburgh. Dr. Mott early gained a world-wide reputation for boldness and originality as an operative surgeon. He died in New York city, April 26, 1865.

**Motte, Fort**, a Revolutionary fort, on the Congaree river, S. C., about 33 miles below Columbia.

**Mouflon, Moufflon, or Mufflon**, a wild species of sheep, formerly common in Spain, now restricted to Corsica and Sardinia. It frequents the summits of hills, in small herds, headed by an old ram, and is not easily approached by the hunter.

**Moulton, Louise Chandler**, an American poet; born in Pomfret, Conn., April 10, 1835. She married William U. Moulton, a Boston publisher, and published children's stories, novels, essays, and poems. D. 1908.

**Moultrie, Fort**, a defensive work on Sullivan's Island, at the mouth of Charleston Harbor, S. C., celebrated for the repulse of a British squadron commanded by Sir Peter Parker, Jan. 28, 1776.

**Moultrie, William**, an American military officer; born in South Carolina, in 1731. He was of Scotch descent, his parents emigrating to South Carolina. In 1761 he commenced his career as captain in a militia regiment of infantry, raised for the defense of the frontier against the Cherokees. He was elected to the provincial congress in 1775, and was at the same time appointed colonel of the 2d South Carolina regiment. In 1776 he was designated to construct a fort, which afterward received his name, on Sullivan's Island, at the mouth of

## Mound Birds

Charleston harbor. The fort, which had 26 guns and 435 men, and was commanded by Moultrie, had been hastily built of palmetto logs, in two rows 16 feet apart, with the space between filled with sand. The British fleet attacked the fort before its completion, but were repulsed with great slaughter. Moultrie was soon after made brigadier of the Continental forces, and distinguished himself by the repulse of the British in their advance on Charleston, in 1779. In the spring of 1780 Charleston was again attacked, and Moultrie, who was second in command, shared in the capitulation of the American forces. He remained a prisoner two years, being exchanged in 1782, and was promoted a Major-General by Congress the same year. In 1785 he was elected governor of South Carolina, and again in 1794, after which he retired to private life. He died in Charleston, S. C., Sept. 27, 1805.

**Mound Birds**, a family of gallinaceous birds remarkable for the large mounds which they build as incubators for the eggs. They are natives of Australasia and of the islands in the Eastern Archipelago and Pacific.

**Mound Builders**, the name given to a prehistoric race, formerly inhabiting the Ohio and Mississippi valleys, who have left some very remarkable earthworks as their only memorials. The best known group of mounds is near Newark, O., and consists of elaborate earthworks, in the form of a circle, octagon, and square, enclosing an area of about 4 square miles, on the upper terrace between two branches of the Licking river. Scattered over the same plain, and crowning the neighboring hills, are numerous tumuli or mounds, evidently erected by the same people that built the larger works. The human remains found in these mounds are usually so much decayed as to preclude the recovery of a single bone entire. This fact has been regarded as evidence of the great antiquity of the mounds, since in England, where the moist climate is much less favorable for the preservation of such remains, perfect skeletons have been found after being buried 1,800 years. There is at present, however, a growing tendency to distrust the theory of their great age, as it is known

## Mountain

that Southwestern Indians have built mounds within the historic period.

**Mound City**, St. Louis, Mo.; so named because in the vicinity are many of those artificial erections generally ascribed to the labors of the "mound builders." Pop. (1930) 1,525.

**Mountain**, a large or very high hill; a large mass of earth rising to a great height above the level of the adjacent land; a high elevation or prominence upon the earth's surface; a high mount.

### HIGHEST AND GREATEST MOUNTAINS IN THE WORLD.

Name.	Feet.
Antisana, Ecuador .....	14,300
Ararat, resting-place of Noah's Ark..	12,700
Ben Nevis, highest in Great Britain,	
Scotland .....	4,400
Black Mountain, the highest of the	
Blue Ridge, N. C. ....	6,500
Blanc, Mont, France.....	15,900
Brown Mountain, highest of the	
Rocky Mountains .....	16,000
Chimborazo, Republic of Ecuador...	21,400
Cotopaxi, the highest volcano, Ecua-	
dor .....	18,900
Dhawalaghiri, one of the Himalaya	
Mountains, Asia .....	25,500
Etna, a volcano in Sicily.....	10,900
Fremont's Peak, Rocky Mountains,	
Wyo .....	13,575
Geesh, Africa .....	15,100
Hecla, a volcano in Iceland.....	5,600
Hindu-Kush, Afghanistan .....	20,594
Himalayas (Mount Everest), highest	
in the world, Tibet.....	29,000
Humphrey Peak, Ariz.....	12,563
Hunchback Mt., Col.....	13,755
Hunt Peak, Col.....	14,055
Hurricane Peak, Col.....	13,565
Jungfrau, Alps, Switzerland.....	11,700
Kilima-Njaro highest in Africa.....	18,700
Lamotte Peak, Utah.....	12,893
La Plata Mt., Col.....	14,311
Lebanon, Syria .....	10,000
Leon Peak, Col.....	10,954
Lewiston Peak, Utah.....	10,623
Liberty Peak, Mont.....	9,163
Logan's Peak, Utah.....	10,004
Long's Peak, Col.....	14,271
Mansfield, highest of Green Moun-	
tains, Vt.....	4,275
Miltzin, highest of Atlas Mountains,	
Morocco .....	11,498
Mount Marcy, highest in New York.	5,400
Mount Hood, Or.....	11,220
Mount St. Helen's, Wash.....	13,475
Mount Liedy, Wyo.....	11,177
Mount Logan .....	19,500
Mount McKinley, highest in North	
America .....	20,500
Mount Ranier, Wash.....	14,445
Mount Shasta, Cal.....	14,440
Mount Fairweather, Alaska.....	14,475



## Mountain Ash

### HIGHEST AND GREATEST MOUNTAINS IN THE WORLD.

Name.	Feet.
Mount Washington, Cal.....	10,802
Mount Whitney, Cal.....	14,885
Olympus, Greece.....	6,600
Ophir, Sumatra, East Indies.....	13,800
Orizaba, highest in North America, Mexico.....	18,170
Farnassus, the home of the Muses, Greece.....	6,000
Perdu, Mont, highest of the Pyrenees, France.....	11,300
Popocatepetl, Mexico.....	17,700
Peaks of Otter, Va.....	4,250
Pike's Peak, Col.....	14,215
Redslate Peak, Cal.....	13,400
Round Top, highest of Catskill Mountains, N. Y.....	3,800
Roa, Mount, highest in Oceania, Hawaii.....	17,500
Santa Clara Mountain, N. M.....	11,507
Santa Fé Baldy Peak, N. M.....	12,661
San Francisco Mountain, Ariz.....	12,794
Sinai, Mount, Arabia.....	8,200
Sneehattan, highest Dovrefjeld Mountains, Norway.....	8,110
Sorota, highest in America, Bolivia.....	25,400
St. Bernard, Switzerland.....	8,000
St. Elias, Alaska.....	19,500
Stromboli, volcano in the Mediterranean Sea.....	3,000
Teneriffe, Peak of, one of the Canary Isles.....	12,000
Vesuvius, volcano, near Naples.....	3,900
Washaku Needle, Ariz.....	12,000
Washington, Mount, highest of White Mountains, N. H.....	6,293

**Mountain Ash**, an American tree bearing beautiful red berries; also a European tree, 10 to 30 feet high. Wild in woods, on hillsides, chiefly in mountainous districts, and cultivated in gardens.

**Mountain Railways**, roads built especially for the ascension of mountains. The first example of this kind of road built in the United States was at Mauch Chunk, Pa., opened in May, 1827. It was first used to draw coal from the mines to the Lehigh river, the cars descending by gravity and being returned by mules. There is now a powerful stationary engine on the summit to draw up the train which is used exclusively for tourists. The Mount Washington Railway in the White Mountains, N. H., was begun in 1866 and opened in 1869. The track is of three rails, bolted to a heavy timber trestle, the cog-wheel which draws the train, running on the center rail. The seats are so suspended as to swing horizontally. The ascent is made in an

## Mountain Railways

hour and a half. The Otis Elevating Railway, in the Catskills, has an incline 7,000 feet in length, with a rise of 1,600. The road running from Manitou to the summit of Pike's Peak, Col., is 8 miles long, ascending 14,146 feet. This is, also, a cog-wheel road, and the engine pushes up, instead of pulling the cars. It was finished in 1890. Among other engineering feats of a similar kind in the Rocky Mountains should be classed the building of a road from Boulder to Ward and one over the Marshall Pass. Early in 1898, the aerial railway over the Chil-



MOUNTAIN ASH IN FLOWER.

koot Pass to Lake Linderman was completed, shortening the time between tidewater and the headwaters of the Yukon river from a month to a day, and greatly reducing the hardships of the route. Switzerland offers several striking examples of mountain railways. In Italy there is a private road running up to the crater of Mount Vesuvius, near Naples. Darjeeling, India, a point commanding a very extensive range of view in the Himalaya Mountains, is reached by a road that in one place skirts the edge of a precipice 1,000 feet deep. The speed of the train does not exceed 7 miles an hour, and eight hours are spent in covering the entire distance, 58 miles.

**Mount Carmel**, a borough in Northumberland county, Pa.; on the Lehigh Valley and other railroads; 6 miles E. of Shamokin; is an important coal-mining and shipping point, with manufactures of miners' supplies. Pop. (1930) 17,967.

**Mount Desert**, an island off the coast of Maine.

**Mount Elias**. See ELIAS.

**Mount Holyoke College**, an educational, non-sectarian institution for women in South Hadley, Mass.; founded in 1837.

**Mount McKinley**, a mountain of the McKinley range, in Alaska. It is situated about 125 miles N. of Cook Inlet, and stands close to the intersection of the 63d parallel of N. latitude with the 151st meridian of W. longitude. Recent measurements made by the United States Geological Survey show this to be the tallest peak on the American continent, overtopping Mount St. Elias and Mount Logan by about 1,000 feet, its height being 20,464 feet. Its summit is visible on clear days for a distance of 125 miles or more.

**Mount Vernon**, a city in Westchester county, N. Y.; on the Bronx river and several railroads; 13 miles N. of New York city; commands an excellent view of Long Island Sound; is the seat of the New York Christian Home and the Martha Wilson Home for Aged Women; manufactures surgical instruments, refrigerators, musical instruments, silverware, and rubber goods; and contains many fine residences of New York business men. Pop. (1930) 60,449.

**Mount Vernon**, the estate of President Washington, in Fairfax co., Va., on the right bank of the Potomac river; 15 miles S. of Washington. The dwelling is a wooden mansion, 96 feet long, erected on a bluff 200 feet above the river, and commanding an excellent view. The estate, originally named Hunting Creek and comprising 800 acres, was inherited by Washington in 1752 from his brother Lawrence, who had changed the name in honor of his former commander, Admiral Vernon of the British navy. The central part of the house was built by Lawrence, and the wings were added by George. The house and 200 acres

of land around it were bought by the Mount Vernon Ladies' Association in 1859 for \$200,000, raised in great part through the exertions of Edward Everett, and have been restored as nearly as possible to their condition in George Washington's lifetime. In ascending from the river to the house the visitor passes the plain, brick tomb of Washington, containing, behind an iron grating, two sarcophagi with the remains of the general and his wife, Martha. The home contains an abundance of interesting relics of which, perhaps, the key of the French Bastille is the most notable. The room in which Washington died is at the S. end of the first floor, and Mrs. Washington died in the one immediately above it. The coach house contains Washington's carriage, and in the garden are trees planted by his hands.

**Mount Washington**, a peak of the White Mountains, in Coos co., N. H.; about 85 miles N. by E. of Concord; height, 6,226 feet above sea-level, being not only the culmination of the White Mountains, but the highest land in New England.

**Mouse-ear Chickweed**, a genus of plants, consisting of many pubescent herbs with small leaves and white flowers, forming common weeds in all temperate and cold regions.

**Mowbray, George W.**, an American inventor; born in Lewes, England, in 1815; educated for a chemist; came to the United States in 1853. He invented the commercial form of nitroglycerin, and used it in blasting for the Hoosac tunnel. Continued experiments resulted in his invention of a smokeless powder, and an improved method of insulating electric wires. He died in North Adams, Mass., June 21, 1891.

**Mowis**, the bridegroom of snow, who (according to American Indian tradition) wooed and won a beautiful bride; but when morning dawned, left the wigwam and melted into the sun's shine.

**Mozambique**, the chief division of the possessions of Portugal on the E. coast of Africa. It lies between German East Africa on the N. and British East Africa on the S. and extends from Cape Delgado to Kose Bay, a point just below Delagoa Bay, a dis-

tance of 1,300 miles. The limits of this territory were defined by agreements in 1886, 1890, and 1891, made between Great Britain and Portugal, and Germany and Portugal; area, 426,712 square miles. The coast belt is low, swampy and unhealthy; but the interior rises into well-wooded plateaus having a fine climate. The forests yield valuable ornamental woods. The soil is naturally fertile, producing maize, rice, manioc, cotton, sesame, cocoanut, india-rubber and medicinal plants. The country is rich in minerals, coal, iron, silver, gold and copper being found there; and mines of the two last named are worked to some extent. There is a railway running from Delagoa Bay to the Transvaal frontier (whence it continues to Pretoria) and one farther S. that connects the coast with Salisbury, the capital of Rhodesia. The pop. of the three divisions is about 3,000,000. The administration is in the hands of a royal governor appointed for three years. Mozambique, the capital, stands on a small coral island lying close to the mainland.

**Mozambique Channel**, a waterway between Madagascar and the E. coast of Africa; about 1,000 miles long and 400 in average breadth.

**Mozart, Johann Chrysostom Wolfgang Gottlieb**, a German composer; born in Salzburg, Austria, Jan. 27, 1756. At the age of four he played the clavichord, and composed a number of minuets and other pieces still extant. When only six years of age his performances were so remarkable that his father took him and his sister, who possessed similar gifts, to Munich and Vienna, where they obtained every kind of encouragement from the Elector of Bavaria and the Emperor Francis I. In 1763 and 1764 the Mozart family visited Paris and London. At the age of seven young Mozart surprised a party of musicians, including his father, by taking part, at sight, in a trio for stringed instruments. Symphonies of his own composition were produced in a public concert in London; and while there he composed and published six sonatas, and made acquaintance with the works of Handel, recently deceased. Two years later, when but 12 years of age, he composed the music for the relig-

ious service and for a trumpet concert at the dedication of the Orphan House Church in Vienna, and conducted it in the presence of the imperial court. In 1769, at the age of 13, he was appointed director of the concerts of the Prince Archbishop of Salzburg. In Rome he reproduced from memory the "Miserere" which he had heard sung in St. Peter's. In 1787 he produced his masterpiece, "Don Juan," which was beyond the comprehension of the Viennese. To 1791, the last year of his short life, we owe "The Magic Flute," "Titus" and the sublime "Requiem" composed in anticipation of death, and finished only a few days before his decease. He died at Vienna, Dec. 5, 1791, in poverty and comparative obscurity, being buried in a pauper's grave.

**Mucilage**, in ordinary language, a solution of gummy matter of any kind in water. In chemistry, the gum of seeds and roots.

**Mud Bath**, a bath in which the body is immersed in mud, often with chemical ingredients. At Eger, in Bohemia, boggy earth is artificially converted into black mud, heated to 100° of temperature. The body is immersed for 15 minutes, after which the patient goes into water to remove the mud.

**Mudfish**, the sole species of the family Amiidae. It attains a length of about two feet; it feeds on fluviatile crustacea, and is sometimes eaten by the Indians. It is limited to rivers and lakes of the United States, abundant between the Rocky mountains and the Alleghanies.

**Mudir**, a Turkish official at the head of a canton or part of a livā under a kaimakam; in Egypt, the governor of a province.

**Muggletonians**, a sect founded by Lodowick Muggleton, London. When about 40 years old he began to have visions and to hear "voices," and asserted that he and John Reeve, another tailor, were the two witnesses mentioned in the Revelation (xi: 3). "The Divine Looking Glass" was published in 1656 as an exposition of their teachings.

**Mugwump**, a political term coined during the heated presidential campaign of 1884 between Grover Cleve-

land and James G. Blaine. It was applied to such members of the Republican party as refused to support their party nominee. The word belongs to the Algonquin dialect of the Indian languages of North America.

**Muhlenberg, William Augustus**, an American clergyman; born in Philadelphia, Pa., Sept. 16, 1796. From 1846 to 1877 he was rector of the Church of the Holy Communion, New York. His time was largely given to educational work and the amelioration of the condition of the poor. Among his writings is "I Would Not Live Always," the story of the hymn which made his name immortal. Died in New York, April 8, 1877.

**Muhlenberg College**, an educational institution in Allentown, Pa.; founded in 1867 under the auspices of the Lutheran Church.

**Muir, John**, an American scientist; born in Dunbar, Scotland, April 21, 1838; educated in Scotland and at the University of Wisconsin. When a young man he was nearly blinded, while working in a carriage factory. Despairing of regaining his sight, he set out to see as much of the world as possible before becoming totally blind. For 25 years he wandered from the Gulf of Mexico to the glaciers of Alaska. In 1879 he discovered the famous Alaska glacier which bears his name. He was a member of the relief expedition sent to the Arctic regions on the United States steamer "Corwin." He wrote over 150 articles on the physiography and natural history of the Pacific coast, Alaska, etc. He died Dec. 4, 1914.

**Mulatto**, a person that is the offspring of parents of whom one is white and the other is a negro. The mulatto is of a dark color tinged with yellow, with frizzled or woolly hair, and resembles the European more than the African.

**Mulberry**, a genus of trees, natives of temperate and warm climates. The fruits of the several species are eatable. The white mulberry is the one most frequently used for feeding silkworms. It has a sub-acid succulent fruit; the black mulberry is also used for silkworms.

**Mule**, a term loosely used as synonymous with hybrid, more usually

applied to the produce of a male ass with a mare, the mule proper, and to the hinny, the offspring of a stallion and a she-ass. The mule does not attain maturity as soon as the horse, but is useful a much longer period. As a beast of burden it is in some respects preferable to the horse; it is easily fed, is equally good for carrying and drawing, its less sensitive skin enables it to support exposure to the weather; like the ass, it enjoys comparative immunity from disease, and it is as surefooted as a goat. Mules have been known from the earliest ages. Female mules rarely produce living offspring, and the same statement applies to hybrids generally.

In botany, a hybrid; a cross between two distinct species. They are produced by the application of the pollen of one to the stigma of the other. Mules between two different genera are called bigeners. They are rarely obtained. In farriery, a disease in horses. In spinning, a spinning machine in which the rovings are delivered from a series of sets of drawing rollers to spindles placed on a carriage, which travels away from the rollers while the thread is being twisted, and returns toward the rollers while the thread is being wound. It was invented by Samuel Crompton, of Bolton, England, and perfected in 1779.

**Mülhausen**, a town of France in Alsace-Lorraine, comprising the old town on a small island between the Ill river and the Rhone-Rhine canal, and the new town S. E. of the old, extending from the right bank of the Ill to the canal. It is an important railroad station and a leading seat of the cotton industry in Europe, its industrial importance really dating from 1746, when a cotton factory was established. In the 13th century it became a free city of the German Empire; in the 16th it became a part of the Swiss Confederation; at the French Revolution it was incorporated with France; and in 1871 it again became German. On Aug. 7, 1914, the French entered the town on their invasion of Southern Alsace, but on the 25th they were forced by the Germans to evacuate it. Pop. (1925 Est.) 98,200.

**Muller, Friedrich Max**, a German philologist; born in Dessau, Ger-

many, Dec. 6, 1823; son of Wilhelm Muller, the German poet. He was a most engaging lecturer, being able to impart rare interest by his clear and brilliant style. He was the author of "A History of Ancient Sanskrit Literature," "On the Origin and Growth of Religion as Illustrated by the Religions of India," etc. He died in Oxford, England, Oct. 28, 1900.

**Muller, George**, a British philanthropist; born near Halberstadt, Prussia, Sept. 27, 1805. In 1835 he printed proposals for the establishment of an Orphan Home, which took shape in 1836 at Bristol. By 1875 upward of 2,000 children were lodged, fed, and educated, and \$3,750,000 had been received in donations. Muller visited Europe, America and Asia on evangelistic tours. He died in Bristol, England, March 10, 1898.

**Muller, Johann**, a German physiologist; born in Coblenz, Prussia, July 14, 1801. In 1833 he published his great work, "The Physiology of Man," which was soon afterward translated into French and English. Muller founded the physico-chemical school of physiology, raising it from a speculative to a positive science, and reformed the theory of medicine. His 100 publications embrace nearly every subject in comparative anatomy and physiology. He died in Berlin, April 27-28, 1858.

**Muller, Johannes Von**, a Swiss historian; born in Schaffhausen, Switzerland, Jan. 3, 1752. From 1774 to 1780 he lived in Geneva, taught there, and wrote his "Universal History," and published the first volume of his "History of the Swiss." In 1786 he became librarian and councillor of state to the Elector of Mainz, and began the publication of his larger "History of the Swiss League." In 1792, when Mainz was taken by the French, he went to Vienna, where the Emperor Leopold nominated him a member of the privy-council; but in 1804 he left Vienna for Berlin, where he was appointed historiographer of the Hohenzollern family. Introduced to Napoleon after the battle of Jena, he was appointed by him (1807) secretary of state in the new kingdom of Westphalia; but died in Cassel, May 29, 1809.

**Muller, Otto Frederick**, a Danish naturalist; born in Copenhagen, in 1730. He died in 1784.

**Mullion**, a vertical division between the lights of windows, screens, etc., in Gothic architecture. Mullions are rarely found earlier than the early English style.

**Mulock, Sir William**, a Canadian jurist; born in Bond Head, Ontario, Canada, Jan. 19, 1843; educated at University of Toronto; elected to the Canadian Parliament six times, 1882-1904; Postmaster-General, 1896-1905; Minister of Labor, 1900-1905; then became Chief Justice of the High Court of Ontario; was vice-chancellor of the University of Toronto, 1881-1900; knighted, 1902.

**Multiple**, in arithmetic and algebra, a number which contains another number an exact number of times without any remainder; thus, 20 is a multiple of 5.

**Mumbo Jumbo**, an African bogie, hideous and malignant, the terror of negro women.

**Mummy** (by some derived from the Arabic momia, or the Coptic mum, bitumen or wax), the dead body of an Egyptian preserved by embalming. Owing either to the religious opinions of the Egyptians, or to the nature of the country, they embalmed all their dead, and deposited them in subterranean chambers or in grottoes excavated in the mountains. An immense number of them have been found in the plain of Saccara, near Memphis—hence called the plain of the mummies—consisting not only of human bodies, but of various animals, or heads of animals, bulls, apes, ibises, crocodiles, fish, etc. The sepulchral chambers are almost entirely covered with fresco paintings and bas-reliefs, and frequently contain statues, vases, etc. Some of them (the royal sepulchers) consist of suites of spacious halls and long galleries of magnificent workmanship. Those of private individuals vary according to the wealth of the deceased, out are often very richly ornamented. Many of these tombs have been ransacked by Arabs for the purpose of plunder, and great numbers of the mummies destroyed for the resin or asphaltum they contain, which is sold to advantage in Cairo.



The tombs of mummies are, many of them, 2,000 or 3,000 years old. The processes for the preservation of the body were various. Those of the poorer classes were merely dried by salt or natron, and wrapped up in coarse cloths, and deposited in the catacombs. The bodies of the rich and the great underwent the most complicated operations, and were laboriously adorned with all kinds of ornaments. Embalmers of different ranks and duties extracted the brain through the nostrils, and the entrails through an incision in the side; the body was then shaved, washed, and salted, and after a certain period the process of embalming properly speaking, began. The whole body was then steeped in balsam and wrapped up in linen bandages; each finger and toe was separately enveloped, or sometimes sheathed in a gold case, and the nails were often gilded. The bandages were then folded around each of the limbs, and finally around the whole body to the number of 15 to 20 thicknesses. The head was the object of particular attention; it was sometimes enveloped in several folds of fine muslin; the first was glued to the skin and the others to the first; the whole was then coated with a fine plaster. A collar of cylindrical glass beads of different colors is attached to the masks which cover the head, and with it is connected a tunic of the same material. The beads, both in the collar and tunic, are so arranged as to form images of divinities, of the scarabæus, the winged globe, etc. Instead of this the mummy is sometimes contained in a sort of sheath, made of paper or linen, and coated with a layer of plaster, on which are paintings and gilding. These paintings represent subjects relating to the duties of the soul, its presentation to the different divinities; and a perpendicular hieroglyphical inscription in the center gives the name of the deceased, and of his relations, his titles, etc. The whole is then placed in the coffin.

**Mummy Wheat**, a variety of wheat said to have been produced from grains found in an Egyptian mummy. It has long been in general cultivation in Egypt and neighboring countries in Africa. The spike is compound.

**Mumps**, a contagious disease communicated by the saliva, sometimes

epidemic, and characterized by a specific swelling and inflammation in the parotid and salivary glands, commonest in children.

**Munch-Bellinghausen, Baron Eligius Franz Joseph von**, better known as Friedrich Halm, an Austrian dramatist; born in Cracow, April 2, 1806. He studied law, and held various official positions at Vienna. He wrote: "The Son of the Wilderness," well known in America under the title "Ingomar"; "The Fencer of Ravenna," perhaps his best work, etc. He died in Vienna, May 22, 1871.

**Munchausen, Baron Hieronymus Karl Friedrich von**, a German-Russian military officer; born in Bodenwerder, Hanover, May 11, 1720. He died in Bodenwerder, Feb. 22, 1797. A compilation of his prodigious "yarns" was published in London in 1785, under the title of "Baron Munchausen's Narrative of His Marvellous Travels and Campaigns in Russia," and was followed by two later editions.

**Muncie**, city and capital of Delaware county, Ind.; on the White river and the Central Indiana railroad; 55 miles N. E. of Indianapolis; has an abundant supply of natural gas, which is used in its varied manufacturing, including large iron, steel, and glass works, and railroad shops; and is the seat of Palmer University. Pop. (1930) 46,584.

**Munde, Paul Fortunatus**, an American gynecologist; born in Dresden, Saxony, Sept. 7, 1846; came to the United States in 1849. He entered the Union army and served as acting medical cadet during a part of 1864. He was graduated at Harvard Medical School in 1866; then went to Germany; enlisted as an assistant surgeon in the Bavarian army; and served throughout the war, receiving the Iron Cross from the emperor for his heroism in removing the patients from a burning hospital on the outskirts of Paris. In 1873 he returned to the United States, settled in New York city, and applied himself to the specialties of gynecology and obstetrics. He was editor of the "American Journal of Obstetrics" in 1874-1892; one of the founders of the American Gynecological Society; president of the New York Obstetrics Society in 1886-1893;



president of the American Gynecological Society in 1897-1898; and a member of other medical societies. He died Feb. 7, 1902.

**Munger, Theodore Thornton**, an American clergyman; born in Bainbridge, N. Y. March 5, 1830. Was graduated at Yale in 1851, and at Yale Theological School in 1855. After 1885 was pastor of the United Church, New Haven, Conn. D. 1910.

**Munich** (German München), the capital city of Bavaria, on an extensive plateau, about 1,700 feet above sea-level, chiefly on the left bank of the Isar. The old town has a quaint and irregular character, but the new town, which has sprung up chiefly to the N. and W., has a regular and imposing appearance, and altogether Munich is one of the finest towns in Germany. The royal palace forms a very extensive series of buildings chiefly in the Italian style, and contains many magnificent apartments and rich artistic and other treasures. The royal library (occupying a fine building in the Florentine style) has upward of 1,000,000 volumes and 30,000 MSS., being thus one of the largest in Europe. The industries, are numerous, and in some particular branches have acquired a high name. Among others may be mentioned painted glass and other artistic productions, mathematical, optical, and surgical instruments, gold and silver lace, jewelry, glass, carriages, bells, musical instruments, etc. Munich was founded by Henry, Duke of Saxony, in 962; taken by Gustavus Adolphus in 1632, by the French under Moreau in 1800, and by Napoleon in 1805. Pop. (1925) 680,740.

**Municipal Ownership**, a term applied to the ownership and operation of public utilities by municipalities, as distinguished from those owned and operated by private corporations. Probably no single civic interest has been discussed more profoundly than this, in nearly every large city in the world, and yet very many cities have been running for years under a limited form of public ownership without really being aware of the fact.

In the United States the principle, in recent years, has been daily gaining popularity and, consequently strength.

Many cities that adopted some features of it in the past are now undertaking new ones, and other cities are gradually changing from the corporate to the public ownership and operation.

The principle, in brief, looks to the creation or acquisition by a municipality of such public conveniences and necessities as water, sewerage, gas and electric lighting and street railway plants, general and special hospitals, dispensaries, baths, docks, ferries, employment bureaus, and—a late phase—domiciles for the working-classes. To these, of course, may be added a long list of conveniences that an unusually paternal municipal government might see fit to provide.

**Munkacsy, Michael**, a Hungarian painter, whose real surname was Lieb; born in Munkacs, Hungary, Oct. 10, 1846. In 1872 he settled in Paris. He visited New York in 1886. Except a few portraits, his works are nearly all genre pictures. He died in Bonn, Germany, May 1, 1900.

**Munkacs**, a town of Hungary, 30 miles from the Galician border, 68 miles S. E. of Kaschau, on the Latorcza river; manufactures hosiery, saltpeter, and alum; has mines of iron and rock crystal (Hungarian diamonds) in the vicinity. It is chiefly noted because of a famous fortress on a steep rock two miles distant. Pop. about 15,000.

**Munkittrick, Richard Kendall**, an American poet; born in Manchester, England, March 5, 1853; on staff of "Puck," New York, 1881-89. He died Oct. 17, 1911.

**Munzer, Thomas**, a leader of the Anabaptists, born in Stolberg, in the Harz, about 1489. He studied theology, and in 1520 began to preach at Zwickau. His Christian socialism and his mystical doctrines soon brought him into collision with the Reformers and the town authorities. Deprived of his office, he visited Nuremberg, Basel, and other S. German cities, and was finally in 1525, elected pastor of the Anabaptists of Muhlhausen, where he won the common people, notwithstanding Luther's denunciations of him, introduced his communistic ideas, and soon had the whole country in insurrection. But

on May 15, 1525, he and his men were totally routed at Frankenhausen by Philip of Hesse. Munzer himself was captured in flight and executed in Muhlhausen, Prussian Saxony, May 30, 1525.

**Murad V.**, Sultan of Turkey; born Sept. 21, 1840. He was son of Abdul-Medjid, and he succeeded to the throne on the forcible deposition of Abdul Aziz, Aug. 31, 1876, but was deposed in the course of the same year on account of insanity, and was succeeded by his younger brother Abdul Hamid II. He died Aug. 29, 1904.

**Muraena**, in ichthyology, the typical genus of the family Muraenidae. Scaleless; the teeth well developed. Gill openings and clefts between the branchial arches narrow. No pectorals; dorsal and anal fins well developed. Two nostrils on each side of the upper surface of the snout. Eighty species are known, from the tropical and sub-tropical zones. One from the Indian seas attains a length of 10 feet and has the tail twice as long as the body.

**Mural Crown**, the corona muralis of the Romans; a wreath, chaplet, or crown of gold, indented and embattled, given by the Romans to the soldier who first mounted a breach in storming a town.

**Mural Decoration**, the embellishment of walls. It dates from very ancient times. American public and private buildings afford some splendid examples.

**Murat, Joachim**, a French military officer; born in Bastide, Lot, France, March 25, 1771. The Directory made him chief of brigade, and in 1796 he accompanied Bonaparte to Italy as aide-de-camp. Here he distinguished himself by his impetuous courage as a cavalry officer, and was employed as a diplomatist at Turin and at Genoa. He followed Napoleon to Egypt, where he decided the victory over the Turks at Aboukir, and returned as General of Division. In 1800 he married Marie Caroline, Napoleon's younger sister; and in 1804 Murat was made Marshal, Grand Admiral, and Prince of the French empire. His services in the campaign of 1805 against Austria, during which he entered Vienna at the head of the army, were rewarded with the grand-

duchy of Berg. He continued to share Napoleon's victories with such distinction, that, in 1808, the emperor placed him on the throne of Naples. After reigning peaceably four years, he was called to accompany Napoleon to Russia, as commander-in-chief of his cavalry; and, after the defeat of Smolensk, he left the army for Naples. He next took part with Napoleon in the fatal campaign of Germany; but, after the battle of Leipsic, he withdrew, and finding that the throne of the emperor began to totter, concluded an alliance against him. In 1815, however, he again took up arms, and formed a plan to make himself master of Italy as far as the Po, at the very time that Austria and the allies, on his repeated assurances that he would remain true to them, had determined to recognize him as King of Naples. It was too late. Austria, therefore, took the field against him, and he was soon driven as a fugitive to France. After the overthrow of Napoleon he escaped, in the midst of continual dangers, to Corsica, from which he sailed with a few adherents to recover his lost throne. A gale, off the coast of Calabria, dispersed his vessels, but Murat determined to go on shore. He was seized, and carried in chains to Pizzo, brought before a court-martial and condemned to be shot. This sentence was executed Oct. 13, 1815.

**Murat, Napoleon Achille**, a French-American author; born in Paris, France, Jan. 21, 1801. He was son of Joachim Murat, King of Naples, and hence Prince of the Two Sicilies. Coming to the United States in 1821, he settled at Tallahassee, Fla., where he was mayor 1824, and postmaster 1826-1828. He wrote in French "Essays Moral and Political on the United States of America"; "Exposition of the Principles of Republican Government as Perfected in America," the latter running through over 50 editions. He died in Nasceissa, Fla., April 15, 1847.

**Murchison, Sir Roderick Impey**, an English geologist; born in Tarradale, Ross-shire, Scotland, Feb. 19, 1792. The term "Silurian System," which is the name of his first great work, was first used by him. In 1854 he produced "Siluria; the

History of the oldest known Rocks containing Organic Remains, with a Brief Sketch of the Distribution of Gold over the Earth." In 1855 he was appointed Director-General of the Geological Survey of Great Britain and Director of the Metropolitan School of Science applied to Mining and the Arts. He died Oct. 22, 1871.

**Murder**, homicide with malice aforethought; the unlawful killing of a human being by a person of sound mind, with premeditated malice. Murder is divided into various degrees, such as murder in the first degree, which is punishable by death in most of the States of the Union, and lesser degrees punishable by various terms of imprisonment. The crime is modified in law also by the terms manslaughter and homicide.

**Murdoch, William**, a Scotch inventor; born near Auchinleck, Ayrshire, Scotland, Aug. 21, 1754. At Redruth, in 1784, he constructed a model high-pressure engine to run on wheels, the precursor of the modern steam locomotive; a year later he invented the oscillating engine, the system of which is still in use; and the rotary engine with sun-and-planet circular motion is also his invention. In 1803 he constructed a steam gun; and some time later produced the well-known cast-iron cement made of iron borings and sal-ammoniac. In 1815 he introduced the hot-water apparatus which, with certain slight modifications, is now extensively used for heating large buildings and conservatories. But his work as a gas inventor remains his most conspicuous achievement. In 1792 he first lighted his offices and cottage at Redruth with coal gas, but it was not till 1798 that he constructed his first extensive apparatus at Birmingham for the making, storing, and purifying of gas. He retired from business in 1830, and died in Birmingham, England, Nov. 15, 1839.

**Murex**, plural **Murices**, a shellfish of world-wide distribution, of which 180 species are known. The canal is produced to twice the length of the body of the shell, and fringed with three rows of long, slender spines, curved like the teeth of a harrow. The celebrated Tyrian purple was obtained from a species of *Murex*.

**Murfree, Mary Noailles**, pseudonym Charles Egbert Craddock, an American novelist; born in Murfreesboro, Tenn., Jan. 24, 1850. Died in 1922.

**Murillo, Bartolomeo Esteban**, the greatest of all the Spanish painters; born in Seville, Spain, Jan. 1, 1618. In 1646 he finished painting the little cloister of St. Francis; and the manner in which he executed it produced the greatest astonishment among his countrymen. His picture of the "Death of Santa Clara," and that of "St. James Distributing Alms," crowned his reputation. In the first he showed himself a colorist equal to Vandyke, and in the second a rival of Velasquez. They obtained him a multitude of commissions, which procured him an independent fortune. He enriched the churches and convents of Seville and other cities with numerous works. Having been invited to Cadiz to paint the grand altar of the Capuchins, he there executed his celebrated picture of the "Marriage of St. Catharine." As he was about to finish it he injured himself severely by a fall from the scaffolding, and died soon after from the effects of the accident, in Seville, April 3, 1682.

**Murphy, Henry Cruse**, an American journalist and historical writer; born in Brooklyn, N. Y., July 5, 1810. He was a lawyer by profession; was minister to The Hague 1857-1861. He wrote: "Henry Hudson in Holland"; "Anthology of the New Netherlands"; etc. He died in Brooklyn, N. Y., Dec. 1, 1882.

**Murray**, the largest river in Australia, rising in the Australian Alps about 36° 40' S. and 147° E., its course being partly in New South Wales, partly in Victoria. It flows for a long distance W., forming the boundary between the two colonies, then passes into South Australia, where it takes a S. direction, and falls into the sea through a large shallow sheet of water called Lake Alexandrina.

**Murray, James Augustus Henry**, a British lexicographer; born in Denholm, Roxburghshire, Scotland, in 1837. He has long been compiling "A New English Dictionary on Historical Principles." The aim of this dictionary is to furnish an adequate account of the meaning, origin, and

history of English words. Its purpose is "not to dictate, but to record usage." He died July 27, 1915.

**Murray, James Stuart, Earl of,** Regent of Scotland, the natural son of James V. by Margaret, daughter of Lord Erskine, born in 1533. At five years of age his father made him Prior of St. Andrews, and he was long known by that title. He became a warm supporter of the Reformers. On the return of Mary to Scotland as queen, Murray became her chief adviser, and was created first, Earl of Mar, and then Earl of Murray. He was opposed to the queen's marriage with Darnley. He remained out of Scotland for some months, in 1567, only returning on the accession of James VI. He saw his sister a captive in Lochleven Castle, and was soon after named regent. Mary having escaped and taken arms, he encountered and defeated her at Langside, in 1568, and was one of the witnesses against her on her trial. The Regent Murray fell by the shot of an assassin in Linlithgow, Jan. 21, 1570.

**Murray, John,** founder of Universalism in the United States; born in England, Dec. 10, 1741; died in Boston Mass., Sept. 3, 1815.

**Murray, John Clark,** a Canadian educator; born in Paisley, Scotland, March 19, 1836. He became Professor of Mental and Moral Philosophy in McGill University, Montreal.

**Murray, John O'Kane,** an American historian; born in Glenariffe, County Antrim, Ireland, Dec. 12, 1847. His most notable work was a "Popular History of the Catholic Church in the United States." He died in Chicago, Ill., July 30, 1885.

**Murray, Lindley,** an American grammarian; born in Swatara, Lancaster co., Pa., April 22, 1745. He received his primary education in Philadelphia in the academy of the Society of Friends. He left his father and taking up his abode in a school at Burlington, N. J., there contracted a love of books and study. He afterward studied the law. His "English Grammar," which so long held its ground, and has passed through an immense number of editions, appeared in 1795. He died in Holdgate, England, Feb. 16, 1826.

**Murray, Nicholas,** pseudonym, Kirwan, an American clergyman and author; born in Ireland, Dec. 25, 1802. He was settled at Elizabeth, N. J. He died in Elizabeth, N. J., Feb. 4, 1861.

**Musca,** in astronomy, the bee; one of Lacaille's revised S. constellations, called by Bayer, Apis. It is situated between Cruz and the South Pole. No star in it is above the fourth magnitude.

**Muscle and Muscular Tissue,** tissue specially distinguished by its contractile power, the instrument by which all the sensible movements of the animal body are performed.

**Muscular Christianity,** a term introduced by Charles Kingsley to denote that robust, healthy, religious feeling which encourages and takes an active part in the harmless and healthy amusements of life, as opposed to a puritanical, ascetic, or contemplative form of religion.

#### North Carolina

**Muscle Shoals,** a dam and power development on the Tennessee River, about 37 miles upstream from Florence, Alabama. It was originally intended to develop power for the surrounding territory and to facilitate navigation on the Alabama River. In 1916 the National Defense Act authorized the establishment of a power plant to meet the demand of the United States for nitrates for explosives. In 1918 the Wilson Dam was directed by the President, and \$17,385,000 was allotted for its construction. In April, 1921, Henry Ford created a furore by offering to take over the dam and power plant for a huge industrial project, but his offer was rejected by the Senate. The whole project has been subject of much controversy.

**Muse,** in mythology, one of nine nymphs or inferior divinities, distinguished as the peculiar protectresses of poetry, painting, rhetoric, music, and generally of the belles-lettres and liberal arts.








**Museum,** a building or apartment appropriated as a repository of things that have an immediate relation to literature, art, or science, and where the objects may be inspected by those who are curious in such matters.

**Mushroom, or Agaric**, a genus of fungi, the species of which are very numerous. See FUNGI.





**Music**, originally any art over which the muses presided, is now that science which treats of tones produced by the mathematically regular vibrations of resonant bodies, such as the human voice and variously designed musical instruments.



A **Tone**, the simplest form of musical sound, is distinguished by the three properties of *length*, *pitch* and *power*. These properties constitute the elemental departments of music: **RHYTHMICS**, treating of the length of tones, the structure of phrases, sections and periods; **MELODICS**, treating of the pitch and succession of tones; and **DYNAMICS**, treating of the power or force of tones, and the manner or form of delivery.


**RHYTHMICS**.—Tones are represented by characters called **Notes**, named by some nations, including the English-speaking races, after the first letters of the alphabet, A, B, C, D, E, F, G, and by Latin nations generally after syllables, as Do, Re, Mi, Fa, Sol, La, Si. Notes by their positions on the staff of five lines give the pitch of the tones, and indicate the length by their form.

The notes in common use are the whole note, ; half-note, ; quarter, ; eighth, ; sixteenth, ; thirty-second, ; the names indicating the relative length of their tones. In modern music, the whole-note, occupying all of an allotted amount of time, is regarded as the unit, although a character representing a tone twice as long as the whole-note, and called a *breve* or double-note () is sometimes used.



**Rests**, characters used to indicate silence, correspond in length of time to the notes which they represent as indicated by their names: Whole-rest,

; half-rest, ; quarter,  or ;

eighth, ; sixteenth, ; thirty-second,

. A dot placed after a note or rest increases the duration of either by one-

half; two dots increase by three-fourths, the second dot adding one-half the length of the first.

A curved line () called a **Tie** or **Bind**, placed over or under two notes of the same pitch, indicates that they represent a single tone equal to their united lengths; the curved line drawn over two or more notes which differ in pitch, is called a **Slur**, and indicates that these notes are to be sung or played *legato*—that is, smoothly and fluently. The **Pause** () or **Hold** is placed over or under a note and indicates a prolongation of the sound, according to the judgment of the performer. Three equal notes may have their length diminished or reduced by placing the figure 3 above or below them; so marked they are termed **Triplets**, and their length equals two of the same kind.

To facilitate the reading and performance of musical compositions, they are divided into short sections of equal duration called **Measures** and **Parts**—into measures by single bars and into parts by double bars. If a part is to be repeated, dots, called **Repeating Dots**, precede the double bar.

The regular succession of these parts is called **Meter**, and this mathematical division of sounds by means of measures, metrical divisions and notes, is called **Time**. The Time of each measure is the same as that of every other measure in the part, and is determined by two figures, in the form of a fraction placed at the beginning of the piece or at the beginning of a part. The Numerator of the Fraction indicates the number of **Beat** counts into which the measure is divided; the Denominator indicates the form of note which will represent the beat. Thus,  $\frac{6}{8}$  shows that there are six beat counts in the measure and that an eighth-note will fill each beat. According to the division of the Measure into parts, it is respectively called **Double Measure**, **Triple**, **Quadruple**, or **Sextuple Measure**. Each kind of Measure may have several varieties, according with the length of the notes expressed by the denominator of the fraction.

**Accent**—the life of Rhythm—is a stress given to certain parts of the Measure. In **Double** and **Triple Measures**, the first part is accented;



in Quadruple Measure, the first and third parts; in Sextuple Measure, the first and fourth parts. In measures containing two accents, the first is the principal and stronger.

Rhythm, defined in its broadest application, is the swing and sweep of a musical composition, emphasized by the accents ringing out in their proper places, and attaining a series of climaxes in the special stress given to each metrical division of the work.

A Syncopated Note is one that begins on an unaccented part of a measure and continues on an unaccented part, giving a not unpleasant hiatus or jump to the rhythm.

The length of the beats in each Measure is indicated by certain Italian words, the chief of which are: *adagio*, very slow; *allegretto*, lively, but not so fast as *allegro*; *allegro*, quick, vivacious; *andante*, rather slow; *andantino*, slightly quicker than *andante*; *largo*, slow and solemn; *larghetto*, quicker than *largo*; *lento*, slow; *moderato*, moderate; *presto*, very quick; *prestissimo*, with greatest rapidity.

**MELODICS.**—In this department the Staff is used to represent the relative position and pitch of Tones. The Staff consists of five lines and four spaces, each line and space being called a degree. Added lines, called Ledger or Leger lines, are used to represent tones which are too high or too low to be represented upon the Staff. They may be placed above and below the staff to any extent desired, as they are simply a continuation of the staff, the note immediately above or below the Staff being in a Space. The lines and spaces of the Staff are named from the lowest upwards, 1st line, 1st space, etc., the added lines and spaces above or below also being respectively enumerated 1st line above or 1st line below, etc.

Each degree, or line and space, is designated by one of the first seven letters of the alphabet, determined by the character of the Clef. The Clef is the character placed at the beginning of the Staff to show how the letters are to be applied. The Clefs in common use are the G or Treble Clef, marking the position of G on the second line of the Staff, and the F or Bass Clef, marking the position of F on the fourth line of the staff. The

different vocal and instrumental parts are commonly represented by two or more staves united by a Brace, and called a Score. An Interval is the difference of pitch between any two tones. Between any two tones of the staff having the interval of a step or full tone, another tone may be inserted, dividing the step into two half-steps or semi-tones. These inserted tones are represented on the degrees of the staff by the aid of characters called Sharps and Flats. A Sharp  $\sharp$  placed on a degree raises the pitch of a tone a half-step; a Flat,  $\flat$ , placed on it lowers the pitch of a tone a half-step. Thus a tone inserted between C and D is named C sharp or D flat. A sharp or a flat may be cancelled by a character called a Natural  $\natural$ . A Double Sharp,  $\sharp\sharp$ , is used on a degree affected by a sharp, to represent a tone a half-step above the one affected by the sharp; its power may be cancelled by a sharp and natural  $\sharp\sharp\natural$ . A Double Flat,  $\flat\flat$ , is used on a degree affected by a flat; it may be cancelled by a flat and natural  $\flat\flat\natural$ .

The signature of a staff is the part between the clef and the fraction. It is named from the number of sharps or flats which it contains, and indicates the key in which the composition is to be sung or performed. A sharp, flat or natural not in the signature, but occurring in a measure, is called an Accidental, and applies only to the degree on which it stands.

The Relative Pitch of tones is indicated by a Scale or Tone Ladder. The Diatonic Scale, generally called the Scale, consists of a regular succession of intervals from the key-note to the octave, 1st, 2d, 3d, 4th, 5th, 6th, 7th, 8th or octave. By a compromise called Temperament, in the development of Music, it was found convenient to add to the seven sounds of one group, the first of the next higher, making eight in all. This Scale is also called the Major scale, to distinguish it from another called the Minor scale, having its semi-tones in different order. The third note of each scale denotes its character, two full tones determining the Major and a tone and a half the Minor. The signature of a minor

piece of music is the same as its relative major, the additional sharps or flats being introduced before the proper notes in the piece. The key-note is the first note in the scale. The Key of C has no signature; G has one sharp; D, two sharps; A, three sharps; E, four sharps; B, five sharps; F sharp has six sharps. F natural has one flat; B flat, two flats; E flat, three flats; A flat, four flats; D flat, five flats; G flat, six flats. It will be noticed that beginning with C the fifth note of each scale forms the key-note of the next scale.

The Chromatic Scale is a regular succession of semi-tones. Passing Tones are often introduced, and are usually represented by small notes.

**DYNAMICS**, or the power of tones, constitute the third department. The power of tones is indicated by words, marks of expression, characters and abbreviations, affixed in the positions desired on the composition by the composer.

A Chord is a combination of tones sounded together, while Harmony and Counterpoint define the treatment of chords according to the rules of musical composition.

**Muskegon**, city and capital of Muskegon county, Mich.; on the Muskegon river and the Grand Trunk and other railroads; 38 miles N. W. of Grand Rapids; has the most important harbor on the E. shore of Lake Michigan, formed by an expansion of the river between its mouth and the city; is one of the largest lumber manufacturing cities in the country; and has daily steamer connection with Chicago. Pop. (1930) 41,390.

**Muskogee**, city and capital of Muskogee county, Okl.; near the Arkansas river and on the Oklahoma & Gulf and other railroads; 62 miles N. E. of McAlester; is in what was the Creek Nation; is the metropolis of the E. part of the State; has considerable coal, cotton, corn, and fruit interests; contains a United States Indian agency, Henry Kendall College (Presb.), Bacone University (Bapt.), and Spaulding Institute (M. E.); and nearby are old Fort Gibson, a National cemetery, and Hyde Park. Pop. (1930) 32,026.

**Musk-ox**, a curious animal generally included in the oxen family, but has been also regarded by some naturalists as being more properly classified with the sheep, and in general appearance the musk-ox somewhat resembles a large sheep. Its body is covered by a coat of tufted hair of great length and of a brownish color. The hair affords material for the manufacture of a delicate fabric of silky nature, but it cannot be obtained in sufficient abundance for commercial purposes of any extent. The average size of the male is that of a small domestic ox. In habits these animals are gregarious, each herd numbering from 20 to 30 members, and it inhabits the Arctic regions of America.

**Muskkrat**, a name common to several rodents having little in common except the secretion of a musky substance, or the diffusion of a musky odor; a beaver-like water rat. They inhabit the banks of lakes and rivers in this country, and construct dwellings somewhat resembling small haystacks. Their coloring is so much like that of the muddy banks on which they dwell, that they have been often mistaken for lumps of mud till their movements betrayed them. They are hunted for their fur, which is much valued.

**Mussolini, Benito**, born 1885, an Italian statesman. Organized in Milan, March, 1919, the first local band of the Fascisti. In Oct., 1922, this political organization was strong enough to assume direction of the country with Mussolini as Premier, with practically supreme powers. His policy as Premier was marked by force and executive ability of great strength.

**Mustang**, the small wild horse of Southwestern United States and Northern Mexico, where it is found in extensive herds, and is captured and domesticated as the "Indian pony." It is supposed that the mustangs are descendants of Spanish horses which escaped from domestication in Mexico, and became the parents of the immense herds which afterward occupied the plain and prairie regions of the N. Mustangs display a lofty crest and a proud carriage, are sturdily built, and have legs and feet of the most lasting character.

The term "mustang" is sometimes applied in the American navy to naval officers who have not passed through the naval academy.

**Mustard**, the common name of several plants found in this country. Also a condiment obtained by grinding and sifting the seeds of black and white mustard. The flour produced forms the genuine mustard of commerce. The seeds yield by pressure from 18 to 36 per cent. of a fixed oil, and, after macerating with water and distilling, a small quantity of a highly pungent and volatile oil.

**Musters**, in a military sense, a review of troops under arms, to see if they be complete and in good order, to take an account of their numbers, the condition they are in, their arms and accoutrements, etc.

**Mutiny**, the unlawful insurrection or revolt of soldiers or seamen against the authority of their commanders; open resistance of officers or opposition to their authority. Officers joining in mutiny are guilty of the offense.

**Mutoscope**, a device for exhibiting instantaneous pictures of moving objects taken by the kinetograph or similar instrument. Photographic prints from the series of pictures thus obtained are mounted in consecutive order around a cylinder standing out like the leaves of a book. When this cylinder is slowly revolved, the picture cards being held back by a stop, and allowed to snap past the eye one by one, as one thumbs the leaves of a book, an apparently moving picture is the result.

**Mutsu Hito**, Mikado (or Emperor) of Japan; born Nov. 3, 1852. He ascended the throne in 1867, and married Princess Haruko in 1869. His children are Prince Yoshihito, born in 1879, and proclaimed Crown Prince in 1889, and three princesses. His reign was distinguished by great reforms; and the feudal system, which had impeded the general progress of the country, was abolished. Under his rule Japan entered on an unprecedented era of prosperity. Civilization has made rapid progress, and the introduction of Western arts and ideas and the wars with China and Russia secured for Japan a foremost place among the nations. He died July 30, 1912.

**Muttra**, or **Mathura**, a town of India, in the Northwest Provinces, on the right bank of the Jumna, 30 miles above Agra. For centuries it has been a center of the Buddhist faith; the surrounding country swarms with associations of Krishna and Balarama. The city was sacked by Mahmud of Ghazni in 1017; its temples were destroyed by a native sultan in 1500, and by Aurungzebe in 1669; and it was plundered by the Afghans in 1756. In 1803 it passed into the hands of the British. Area of district, 1,453 square miles; pop. 780,000; pop. of town (1921) 62,400.

**Muzaffer-ed-Din**, Shah of Persia, son of Nasr-ed-Din; born March 25, 1853. He was nominated by his father for the succession in spite of his being the second, and not the eldest son. He held the post of governor-general of the Azerbaijan province, his elder brother, Zil-es-Sultan, being governor of Ispahan. On the death of his father at an assassin's hand, Muzaffer-ed-Din quietly succeeded to the throne May 1, 1896. He died at Teheran, after a long illness, Jan. 8, 1907.

**Muzzey, Artemas Bowers**, an American Unitarian clergyman; born in Lexington, Mass., Sept. 21, 1802; was graduated at Harvard University (1824); at Harvard Divinity School (1828); pastor in Framingham, Cambridgeport, and Newburyport, Mass., and Concord, N. H.; interested in educational and political matters; in 1865 retired from ministerial work. He died in Cambridge, Mass., April 21, 1892.

**Myers, Peter Hamilton**, an American author; born in Herkimer, N. Y., Aug. 4, 1812; died in Brooklyn, N. Y., Oct. 30, 1878.

**Myers, Philip Van Ness**, an American historian; born in Tribes Hill, N. Y., Aug. 10, 1846; was graduated at Williams College, 1871; spent one year on a scientific mission to South America and two years in European travel; was president of Farmers' College, Ohio, 1879-1890; was Professor of History and Political Economy in University of Cincinnati, 1890-1900.

**Mygale**, a genus of spiders. Their nests, constructed of silk, are built in clefts of rock, trees, etc., and in

## Myiodon

the ground. The bird-catching spider of Surinam belongs to this species; other larger species frequently prey on small vertebrate animals, not by laying toils for them, but by regularly hunting them.

**Myiodon**, in palaeontology, a genus of edentate mammals, the best-known species of which reached a length of 11 feet, slightly less than that of the megatherium, which it much resembled.

**Myna**, a genus of birds, of which there are seven species ranging over the whole Oriental region and Celebes. It is one of the commonest birds of India, where it is found in large numbers, being eminently sociable in its habits. It feeds chiefly on insects, grain, and fruit.

**Myopy**, or **Myopia**, near or short sight, a defect of the eye, produced generally by too great convexity of the cornea or crystalline lens, causing the focus to be placed not on the cornea, but in front of it. It occurs in early life from too great use of the eyes on minute objects, as the print in a book, especially by imperfect light. As a rule the defect diminishes with the advance of age.

**Myrobalan**, a dried fruit of various species of trees, brought from the East Indies, all slightly purgative and astringent. Myrobalans are used by the Hindus in calico-printing and medicine, and imported into the United States for dyers and tanners, especially the latter.

**Myrrh**, a shrub growing in Arabia and Abyssinia. The gum resin which exudes from it, also called myrrh, occurs in irregular, roundish masses, called "tears," varying in size from small grains to pieces as large as an egg, semi-transparent, and possessing a reddish-brown color. It has a peculiar and agreeable fragrance, with an aromatic, bitter, and acrid taste.

**Myrtle**, a genus of plants, natural order Myrtaceae, consisting of aromatic trees or shrubs, with simple opposite leaves sprinkled with pellucid glandular points, and having axillary or terminal white or rose-colored flowers. One species, common myrtle, is a native of the south of Europe and countries bordering on the Mediterranean.

**Myslowitz**, a town of German Silesia, on the Przemska river, directly

## Mysticism

across the border of Austrian Galicia, 42 miles E. of Ratibor, 43 miles N. W. of Cracow. It is an important junction of railroad lines to Lemberg and Vienna; has extensive coal mines nearby; and is largely engaged in flax-spinning and brick-making. The iron bridge spanning the river connects the town with the Polish town of Modrzejow. Myslowitz is a modern town, dating from 1857. Pop. about 18,000.

**Mysore**, a native State of Southern India, bounded by districts of the Madras Presidency; area 29,475 square miles; pop. (1921) 5,976,640. The administration is carried on under the Maharaja by a Diwan or Prime Minister, assisted by two councillors, and there is a legislative council formed in 1907. In 1912-13 there were 4,568 public colleges and schools and private schools, with a total attendance of 156,440. Primary education was made free in all schools in 1908. State revenue, 1913-14, \$10,045,000; expenditure, \$8,730,000. Mysore, the capital, is a prosperous, well-built town, with substantial houses and public buildings. Pop. (1925 Est.) 83,400.

**Mysticism**, a term used to denote the knowledge of God and intercourse with God through internal light and the operation of grace, in opposition to revealed faith on the one hand and speculative rational knowledge on the other. Its leading idea is that perfect holiness and spiritual knowledge are to be attained by devout contemplation rather than by outward means of grace and theological study. In the philosophy of the 15th and 16th centuries, in Paracelsus, Bruno, Campanella, and others, mysticism presented itself in extravagant flights of fancy in speculations concerning nature and the general constitution of being and took a direction which at a later period gave rise, on the side of philosophy, to the alchemists and Rosicrucians, and on the side of theology to a number of religious sects of which such men as Jacob Bohmen and Swedenborg may be considered the representatives. Very different opinions may be entertained as to the intrinsic value of the writings of the Mystics, but they are undoubtedly of importance in the history of the human mind as ex-

hibiting one of its most remarkable phases under particular circumstances of development.

**Mythology** (from Greek *muthos* or *mythus*, a tale or fable, and *logos*, a discourse), the collective name for the whole body of fables, legends, or traditions (*myths*) that take their rise at an early period of a nation's existence and of its civilization, and which embody the convictions of the people among whom such fables arise as to their gods or other divine personages, their origin and early history, and the heroes connected with it, the origin of the world, etc. Such fabulous narratives seem to grow up naturally among all early peoples and are found among the ruder races at the present day, but the mythologies which have been most studied, and the tales belonging to which are best known, are those of ancient Greece and Rome, Scandinavia, the Hindus, and ancient Egypt.

Myths are of course believed in by the bulk of the people among whom they are current, and it is only when speculative and reflective spirits arise and when science and philosophy have made some advances that their truth is called in question. Thus, Zeus, Apollo, Athene, Heracles, and the other divinities of ancient Greece, were believed by the bulk of the people to have a real existence and the stories regarding them were looked on as true; but even in Greece in early times the absurdities and monstrosities of some of the myths attracted the attention of philosophers and led to attempts at explaining the stories in

such a way as that they should not shock common sense or moral feeling. By some authors the stories that represent the gods as guilty of gross immorality, as impure, cruel, and deceitful, were flatly denied, and those authors in whose writings such stories are found were accused of having invented them themselves. Homer and Hesiod were severely censured by Xenophanes and Heraclitus on this account; and Plato would not endure the idea that the Homeric poems should be admitted into his ideal republic. Others did not take the rough and ready method of simply denying the truth of the obnoxious stories, but attempted to explain their origin. In doing so they followed three chief systems of interpretation, called respectively by Max Muller the ethical, the physical, and the historical. No one theory, indeed, can be expected to explain the origin of all myths, for though we may admit that many, perhaps most, of them, are physical in origin, it is impossible to deny that others may be pure fabrications, tales invented by early bards or minstrels to beguile a weary hour, while in others fragments of real history may be hidden. To decide what class any myth is to be referred to, we must trace it if possible back to its earliest and most rudimentary form, and then, by the aid of the science of language, we may be able to say whether it is physical in origin or not; but as this will in many cases be impossible, there must always remain a number of myths whose origin cannot be settled.



# N



**n**, the 14th letter and 11th consonant of the English alphabet.

**Nabal**, a rich and influential Israelite of the tribe of Judah. David, having afforded protection to Nabal and saved his flocks and herds, his property, and even his life when in danger, some time after sent to him to supply his troops with provisions, his forces being in want of immediate provender. This, Nabal refused; on which David, stung with the ingratitude of the man to whom he had shown so much favor, taking with him 400 men, set out for the residence of the mercenary Hebrew. Abigail, Nabal's wife, hearing of her husband's conduct and David's resolve, collected such provisions as the army required, and, attended by a train of servants, set out to meet the approaching king. Her beautiful person, combined with the excuses she made for her husband's conduct, so softened the heart of David, that he accepted her gifts, averted his wrath, and Nabal having been "smitten by the Lord" a few days after, David married his widow.

**Nabateans**, a people of Northern Arabia, generally considered to have been of pure Arab blood, though some authorities, identifying them with the Ishmaelite tribe of Nebaioth, regard them as having been closely akin to the Edomites. They took possession of the country once occupied by the Edomites; and in the beginning of the 3d century B. C. they were one of the most powerful among the Arab tribes, warlike, with a force of 10,000 fighting men, nomadic, and busy carriers of merchandise between the East and West. Trajan, in 105, captured their stronghold and put an end to their kingdom. They possessed a certain

measure of culture, derived from the Syrians.

**Nabob**, or **Nabab**, formerly a Mogul provincial administrator; now a name applied to wealthy Hindus, and derisively to Euro-Indians who having amassed fortunes in India, return and make an ostentatious display of their wealth.

**Nabonassar, Era of**, in astronomy, an era followed by Hipparchus and Ptolemy, and adopted from the Chaldean astronomers, who had been in the habit of referring the observations of eclipses to the beginning of the reign of Nabonassar, or Nebuchadnezzar, the alleged founder of the Babylonish empire.

**Nabuco de Araujo, Jose Tito**, a Brazilian dramatist; born in Rio Janeiro, Brazil, Jan. 4, 1836; wrote "The Son of Chance," a drama which has been successfully presented in several of the South American cities; "Life of Lamartine," etc.

**Nachi**, or **Natches**, sometimes called Nahy, or Nagnatez, a tribe of North American Indians who formerly lived on St. Catherine's creek, near the present city of Natchez, Tenn. The name was also applied to the confederacy of towns, of which in 1699 there were eight. Owing to numerous conflicts with the French the confederacy was broken up in 1729, and the people scattered. A few still live among the Creeks and Cherokees in the Indian Nation.

**Nack, James**, an American poet; born in New York city, Jan. 4, 1809. He labored under the disability of being deaf and dumb. He died in New York city, Sept. 23, 1879.

**Nadal, Ehrman Syme**, an American author; born in Lewisburg, W.

Va., February 13, 1843. He graduated at Yale College in 1864; secretary of the United States legation at London, 1870-1871 and 1877-1884; a frequent contributor to magazines.

**Nadir Shah**, Shah of Persia; born in the province of Khorasan, about 1688. At an early age he obtained great notoriety as the chief of a band of robbers, gradually rising to power and distinction by his ambitious daring. In 1720, assuming a mask of patriotism, he raised a body of 5,000 men, and after several dashing achievements, succeeded in driving the Afghans from Persia, and ultimately in conquering the whole of their country, which he added to his own possessions. Later he made still further conquests and established absolute sway over an empire reaching from the Oxus in the N. to the ocean in the S., and from Bagdad in the W. to the Indus in the E. For the first years of his reign justice and moderation were the principles of his power; but as he advanced in years he gradually threw off all consideration, and ruled by his selfish, arbitrary, and unbridled will. He exercised such malignant cruelty on all, that his officers, discovering he meant to destroy them all, formed a league, and entering his tent by night, murdered him as he slept, and placed his nephew Ali on the musnud in June, 1747.

**Nagasaki**, a seaport of Kyushu, Japan. The harbor is famous for its beauty. In 1859 Nagasaki became one of the five open ports. The great Takashima coal mine, on an island 8 miles seaward of the entrance to the harbor, serves to give importance to Nagasaki as a coaling station. Pop. (1925) 189,071.

**Nagel, Charles**, an American executive; born in Colorado county, Tex., Aug. 9, 1849; studied Roman law and political economy at Berlin University; admitted to the bar in 1873; settled in St. Louis, Mo., to practice; became a member of the Legislature in 1881, lecturer at the St. Louis Law School in 1885, president of the City Council in 1893, member of the Republican National Committee in 1908, and Secretary of Commerce and Labor in 1909-13.

**Nagoya**, a city of Honshu, Japan, 75 miles E. by N. of Kioto, capital of

Aichiken; it has a celebrated castle, erected in 1610 by 20 great feudal lords, and regarded as one of the wonders of the town, and porcelain manufactures. Pop. (1925) 768,558.

**Nagpur**, a city of British India, the seat of administration for the Central Provinces, 450 miles E. N. E. of Bombay. It lies embosomed in trees, has several handsome tanks, gardens, and temples, and extensive suburbs, but is not a healthy city, the mean temperature being 78.7°. Pop. (1921) 149,460.

**Nahuas**, or **Nahuatlacas**, a collective name given to the Indian tribes which were the most powerful in Mexico at the time of the Spanish conquest. They had many pueblos, or towns, knew how to cultivate the ground, were skilled in gold and feather work and used hieroglyphics in writing. After the fall of Mexico in 1521 they lost much of their independence and drifted into a state of semi-slavery to the Spaniards. About 2,000,000 Indians of that region are now classed as Nahuas. They are sometimes called Aztecs.

**Nahum**, the 7th of the Minor Prophets; i. e., of the minor books of prophecy. The theme is "The Burden of Nineveh," the utter destruction of which is predicted, the reference probably being to its capture by the combined forces of the Medes and Chaldeans about 625 B. C. The style of the book has been highly commended and its canonical authority has never been doubted.

**Naiad**, in Greek and Roman mythology, one of certain inferior deities, who presided over rivers, wells, springs and fountains, and are represented as young, graceful, and extremely beautiful nymphs, to whom great veneration was paid and sacrifices offered.

**Nails**, flattened, elastic, horny plates, which are placed as protective coverings on the dorsal surface of the terminal phalanges of the fingers and toes.

**Nails**, slender pieces of metal, usually tapering and having a head, used for fastening together pieces of wood, metal or other substances. There are numerous varieties, but the most important are the cut, wrought, horse-shoe, and wire.

**Nairs**, a Mohammedan caste in Malabar, who have peculiar marriage customs.

**Naja**, a genus of serpents, including several that are among the most dangerous of all the venomous snakes. The best known examples of the genus are the cobra de capello of India, and the N. haje of Egypt, which is tamed by native jugglers, and is identified by many writers with the asp employed by Cleopatra to bring about her death.

**Namaqualand, Great, or Nama-land**, the extensive region in South Africa N. of Cape Colony, extending from the Orange river to Damaraland N., and stretching inland from the W. coast to the borders of British Bechuanaland; area, estimated, 322,450 square miles. It is mainly a sterile and barren region, and along a coast line of upward of 400 miles does not present a single running stream; but a few little bays along the coast, afford safe anchorages. In 1885 it became a German possession, but July 15, 1915, it was conquered by British South African forces.

**Namaquas**, the principal existing tribe of the race generally known under the name of Hottentots. They inhabit the region called Great Namaqualand, N. of the Gariep or Orange river, and the country a few miles S. of it, as far as the Kamiesbergen. They are a pastoral people of rather predatory habits, and live under the rule of their chiefs.

**Namaycush**, a fish nearly allied to the salmon, inhabiting the great lakes and rivers of North America. Good-sized specimens weigh from 20 to 40 pounds and it is much esteemed for the table.

**Names**. Among the Greeks, with the exception of a few families at Athens and Sparta, there were no family names. Among the Celtic and German nations, each person was denoted by one word. This was also the case in the early and primitive states of society. Among the ancient Hebrews, the names of Abraham, Aaron, David, Solomon, were employed individually and singly. In the other nations which preceded European civilization, the same feature is to be observed. One word denoted one person in Egypt, Syria, and Persia.

Among the Saxons the same primitive system was prevalent not only when they were first established, but during the whole period when they held dominion in Britain. The names of Alfred, Harold, Edwin, etc., each signified a single individual. At the present day, the system of personal nomenclature is to have one name for the individual prefixed to another name which distinguishes the family to which he belongs. Probably one of the oldest methods of distinguishing different individuals of the same name was by adding their father's name to their own. Hence originated many English, German, and Danish names which end in son, sohn, and sen; for example, Williamson, Andersohn, Thorwaldsen. With feudalism new names were introduced derived from the districts conferred on the nobles, or from the feudal relations. Another class of names are those of locality, which are either derived from places of generic names, as Hill, Dale, Cliff, etc., or from some specific place. Everywhere the nobility had family names before the commoners. But among the latter is a class of names derived from their occupation and trades; such as Smith, Miller, Fisher, Barber, etc. The number of this class is very great, and includes the names of several lost trades, or trades which have changed their names; thus we have Furbisher, Foster, Fletcher, Pargetter, Taverner, Webster, Page, Reeve, etc. Sometimes striking external peculiarities or mental qualities have given origin to names which have descended to the posterity of those on whom they were bestowed; such are Swift, Brown, Long, White, Black, Good, Wise, and others.

**Namur**, a city of Belgium at the confluence of the Sambre and Meuse rivers, 35 miles S. E. of Brussels. It is protected by seven forts, and contains a magnificent cathedral, completed in 1772. Namur was captured by Louis XIV. in 1692; recaptured after a 10 weeks' siege by William III. in 1695; and was occupied by the Germans, Aug. 23, 1914. Pop. (1926 Est.) 30,639.

**Nana Sahib**, the name under which Dundhu Panth, adopted son of the ex-peshwa of the Mahrattas, became known as the leader of the Indian Mutiny in 1857; born about 1825. He

was the son of a Brahmin in the Decan, and, educated as a Hindu nobleman, he was bitterly disappointed that when the peshwa died in 1851 the latter's pension was not continued to himself. He was industrious in fanning discontent with the English rule, on the outbreak of the mutiny he was proclaimed peshwa, and was responsible for the massacres at Cawnpur. After the suppression of the rebellion he escaped into Nepal. He is said to have died about 1860, but a man resembling him was arrested in 1874.

**Nancrede, Charles Beylard**, an American physician; born in Philadelphia, Pa., Dec. 30, 1847; was graduated at the medical department of the University of Pennsylvania in 1869; served as chief surgeon of the 3d Division, 2d Army Corps, and with the 5th Army Corps in the Santiago campaign of 1898, where he was recommended for promotion for gallantry on the field. He was author of "Principles of Surgery" (1899), and of articles in various technical publications.

**Nancy**, a town of France; capital of the department of Meurthe-et-Moselle, on the Meurthe, 220 miles E. of Paris. It has grown much in importance since the German annexation of Alsace-Lorraine, has manufactures of cotton and woolen goods, artificial flowers, iron, tobacco, etc.; but its staple industry is embroidery on cambric and muslin. Dating from the 12th century, Nancy was the capital of the Duchy of Lorraine. Here occurred the death of Charles the Bold (1477), and the birth of Callot and Claude Lorraine. On Jan. 6, 1916, the Germans bombarded the town from a distance of 15 miles. Pop. (1926) 114,491.

**Nankeen**, or **Nanking, Cloth**, a fabric made of a kind of cotton grown in China of a buff-yellow color, and this is also the color of the cloth.

**Nanking**, capital of the province of Kiangsu, formerly the capital of China, on the Yangtse river, 130 miles from its mouth. From 1853 to 1864 it was the capital of the Taiping rebels, who destroyed nearly all the magnificent public buildings for which the city was once famous. Previous to that time the walls enclosed

an area nearly 20 miles in circumference, and reached in many places an elevation of 70 feet. After its recapture by the Chinese imperialists, Nanking resumed its position as the seat of the viceregal government, and an arsenal was established. In 1842 it was captured by the British. Though specified in the treaty of Tien-tsin (1858) as a river port to be opened to foreign trade, little has come of this concession. Pop. (1927 Est.) 395,900.

**Nansen, Fridjof**, a Norwegian scientist and explorer; born in Great Froen, near Christiania, Norway, Oct. 10, 1861. Following 1884, he matured a plan for a polar journey, a vessel (the "Fram") was built, designed especially for encountering the drift ice, and on June 24, 1893, with a crew of 11 men, he set sail from Christiania for the polar regions. They reached the New Siberian Islands in September, and in 1895 were in lat. 84° 4'. There, accompanied by Johansen, Nansen left the "Fram" in charge of his other companions and pushed across the ice to Franz-Josef Land, where he wintered. Here, on June 17, 1896, he met the Jackson-Harmsworth expedition, with which he returned to Vardo, having in his cruise penetrated to lat. 88°, circumnavigated the Nova Zembla, Franz-Josef, and Spitzbergen archipelagoes, and reached a point about 225 miles from the Pole.

**Nantes**, the sixth largest city of France, capital of the department of Loire-Inferieure, on the right bank of the tidal Loire, 35 miles from the sea, and 248 S. W. of Paris. The chief exports are hardware, cereals, and preserved provisions; the chief imports, sugar, iron, cocoa, and wines. Shipbuilding has greatly fallen off, but still is one of the leading industries. Pop. (1926) 184,509.

**Nanticoke**, a borough in Luzerne county, Pa.; on a branch of the Susquehanna river, in the beautiful Wyoming Valley, and on several railroads; 7 miles S. W. of Wilkesbarre; has productive anthracite coal mines; and manufactures mining machinery. Pop. (1930) 26,043.

**Nantucket**, an island, county, town, and county-seat of Massachusetts; off the coast of Cape Cod, 30 miles from the mainland. The island

is about 15 miles long by  $\frac{3}{4}$  of a mile wide; is triangular in shape; and with several small adjacent islands has an area of about 60 square miles. The equable climate and dry soil of the island make it very healthful, and a favorite summer resort. Pop. (1930) 3,678.

**Nanuk**, the founder of the Sikh religion; born 1469; died 1539. He taught men virtue, toleration, and to worship One Almighty Invisible God.

**Naphtali** (Hebrew = my wrestling), the 6th son of Jacob, and the head of one of the 12 tribes. The tribe had its full share in repelling the incursions of the Canaanites during the first centuries of the conquest, but disappears from history when Tiglath-pileser overran the N. of Israel and bore away the whole of the population to Assyria. Under the title of Galilee the district occupied by the tribe became in New Testament times more famous than it had ever been before.

**Naphtha**, a word derived from the Persian word *nafata*, "to exude" and originally applied to liquid hydrocarbons which exude from the ground in the neighborhood of the Caspian Sea.

Commercially, naphtha is now understood to apply to the inflammable distillates of crude mineral oils and coal-tar. For trade convenience the volatile distillates of petroleum and shale oil are known respectively as petroleum spirit and shale spirit, to distinguish each from the other, and both from coal-tar naphtha. The term naphtha also embraces distillates of india-rubber, bones, peat, and wood, the last of these being known as wood spirit or methyl alcohol.

**Napier, Sir Charles**, an English naval officer; born near Falkirk, England, March 6, 1786. In 1813 he was attached to the North American squadron, and in August of the following year he led the expedition up the Potomac river. At the conclusion of the war he was made a C. B. He was appointed in 1839 to the command of the "Powerful," and ordered to the Mediterranean, where, on the outbreak of the war between Mehemet Ali and the Porte, and the coöperation of Great Britain with Russia and Austria on behalf of the latter power, Sir Charles Napier performed some of his

most gallant exploits, including the storming of Sidon and the capture of Acre. Having blockaded Alexandria, he concluded on his own responsibility a convention with Mehemet Ali, by which the latter and his family were guaranteed in the hereditary sovereignty of Egypt on resigning all claim to Syria. On his return to England he was created K. C. B. In 1854, on the commencement of the Russian war, he was nominated to the command of the Baltic fleet, being now a rear-admiral. In this capacity he accomplished little beyond the capture of Bomarsund. He sat in Parliament as member for Southwark from 1855 till his death. He died Nov. 6, 1860.

**Napier, Sir Charles James**, a British military officer; born in London, England, Aug. 10, 1782. In 1812 he was made lieutenant-colonel, and in the following year served in the expedition to the Chesapeake. In 1837 he was made Major-General; in 1838 K. C. B. In 1841 he was appointed to the chief command in the presidency of Bombay, with the rank of Major-General, and was shortly afterward called to Scinde. Here he gained the splendid victories of Meanee and Haidarabad, and was afterward made governor of Scinde, which he administered till 1847. Having returned to England, he died in Portsmouth, Aug. 29, 1853.

**Napier, John**, a Scotch mathematician, the inventor of logarithms; born in Merchiston, near Edinburgh, Scotland, in 1550. He was educated at St. Andrews, traveled on the Continent, and ultimately settled down at the family seats of Merchiston, near Edinburgh, and Gartness, in Stirlingshire, as a recluse student. In 1614 he published his book of logarithms. He died in Merchiston, April 4, 1617.

**Napier, Robert, Lord**, an English military officer; born in Ceylon, Dec. 6, 1810. In 1865, Sir Robert was made Commander-in-Chief of the British army sent out to Abyssinia for the rescue of the English captives, held there by its semi-barbarous ruler, King Theodore. After successfully accomplishing his mission, Sir Robert was raised to the peerage as Lord Napier, of Magdala, and also made a Knight Grand Cross of the Star of India. In 1869, he was appointed Commander-



## Naples

in-Chief of the British Indian army; and governor of Gibraltar in 1876. He died in London, England, Jan. 14, 1890.

**Naples**, a city in Italy, formerly capital of the kingdom and now of the province of the same name, on the W. coast, 117 miles S. E. of Rome, magnificently situated on the N. side of a nearly semicircular bay, partly stretching along the shore and partly climbing the adjacent heights, bounded on the W. by the picturesque heights of Posilipo, and on the E. by the lofty mass of Vesuvius, while the surrounding country is rich in natural beauty and in historic interest.

Naples was founded many centuries before the Christian era by a colony of Greeks who had settled at Cumæ. It took the name of Neapolis (New City) as opposed to the older Greek city of Parthenope adjoining, and is said to have retained strong traces of its Grecian origin to a late period of the Roman empire. It was indebted to the Emperors Hadrian and Constantine the Great for numerous embellishments, and became a luxurious retreat to which many of the wealthier Romans were accustomed to resort. In 536 it was pillaged by Belisarius, and a few years after, when it had been rebuilt, the same disasters again befell it at the hands of Totila (542). It was afterward successively under the sway of the Normans, the Emperors of Germany, and the Kings of France and Spain. Under the latter it became the capital of an independent kingdom, but having been brought within the vortex of the French Revolution, was handed over by Napoleon, first to his brother Joseph, and then to his brother-in-law Murat. The Congress of Vienna having restored the legitimate sovereignty, Naples received back its former masters. After a long period of misrule they were ejected by Garibaldi in 1860, and Naples was then incorporated into the kingdom of Italy. Under the new regime much has been done to improve the city both in sanitary and in other respects. Pop., communal, (1926) 852,362.

**Naples, Bay of** (the ancient Crater Sinus), an arm of the Mediterranean, on the W. coast of Italy. It is separated from the open sea by the

## Napoleon Bonaparte

islands of Procida, Ischia, and Capri. Its shores have for ages been the scene of powerful volcanic agency, and the scenery has long been celebrated for its beauty and grandeur. Mount Vesuvius is the most striking and distinctive feature.

**Napoleon Bonaparte**, or **Napoleon I.**, Emperor of the French; was born Aug. 15, 1769, at Ajaccio, Corsica, and was the son of Charles Bonaparte, an advocate, and of Letizia Ramolino. (See BONAPARTE). In his 10th year he was sent to the military school of Brienne, and after a short time spent at that of Paris he received, in 1785, his commission as lieutenant of artillery. In 1792 he became captain of artillery, and in 1793 he was sent, with the commission of lieutenant-colonel of artillery, to assist in the reduction of Toulon, then in the hands of the British. The place was captured (December 19) entirely through his strategic genius; and in the following February he was made a brigadier-general of artillery. In 1795, when the mob of Paris rose against the Convention, Napoleon was made commander of 5,000 troops provided for its defense, and ended the outbreak. On March 9, 1796, he married Josephine Beauharnais, and soon after he had to depart to assume the command of the army of Italy against the forces of Austria and Sardinia. After a series of victories, Naples, Modena, and Parma hastened to conclude a peace; and the whole of Northern Italy was in the hands of the French. Army after army sent by Austria was defeated; Napoleon carried the war into the enemy's country; and by the Peace of Campo Formio, which followed (Oct. 17, 1797), Austria ceded the Netherlands and Lombardy, and received the province of Venetia.

In December, 1797, Napoleon returned to Paris. About this time the Directory determined to invade Egypt. Napoleon was put in command of the expedition, and on the 1st of July, 1798, he landed at Alexandria. This city fell on July 4, and Cairo was taken on the 24th, after the sanguinary battle of the Pyramids. On Aug. 4 Nelson annihilated the French fleet in the Bay of Aboukir. All means of return to Europe seemed thus cut off. Napoleon having suppressed with rig-

or a riot in Cairo, advanced to attack the Turkish forces assembling in Syria. He took El Arish and Gaza, but after 60 days' siege he was compelled to abandon the attempt to capture Acre, and returned to Cairo. On the 22d of August he abandoned the command of the army to Kleber, and embarking in a frigate landed at Frejus, Oct. 9, having eluded the English cruisers. He hastened to Paris, secured the coöperation of Moreau and the other generals then in the capital, and abolished the Directory on the 18th and 19th Brumaire (November 9-10). A new constitution was then drawn up chiefly by the Abbe Sieyes, under which Napoleon was made first consul, with Cambaceres and Lebrun as second and third consuls. From this time he was virtually ruler of France.

Napoleon's government was marked by sagacity, activity, and vigor in the administration of civil affairs, and so far was beneficial to France, but England was determined to destroy him, and assisted Austria to fight France. Napoleon defeated the Austrians at Marengo, and after the decisive battle of Hohenlinden Austria obtained peace by the Treaty of Luneville, 1801. Treaties were subsequently concluded with Spain, Naples, the Pope, Bavaria, Portugal, Russia, Turkey, and finally, on March 27, 1802, the treaty known as that of Amiens was signed by Great Britain.

In 1802 Napoleon was proclaimed by a decree of the senate consul for life, and in 1804 he had himself crowned as emperor, upwards of 3,000,000 votes of the people being given in favor of this measure. To this period belongs the famous body of laws known as the Code Napoleon.

In 1805 Great Britain, Russia, Austria, and Sweden united against Napoleon who marched at once across Bavaria at the head of 180,000 men, and compelled the Austrian General Mack to capitulate at Ulm with 23,000 men. On December, having crossed the Danube, he completely routed the allied Russian and Austrian armies at Austerlitz. The Austrian emperor instantly sued for peace, giving up to France all his Italian and Adriatic territories. In February, 1806, a French army occupied the continental part of the Neapolitan states, of which Jo-

seph Bonaparte was declared king on the deposition of their former sovereign. Another brother of the emperor, Louis, became King of Holland. Various districts in Germany and Italy were erected by the conqueror into dukedoms and bestowed on his most successful generals.

This brought the victorious ruler into collision with Prussia, and war was declared on Oct. 8. On the 14th Napoleon defeated the enemy at Jena, while his general Davout, on the same day gained the victory of Auerstadt. On the 25th Napoleon entered Berlin and issued the celebrated Berlin decrees, directed against British commerce. He then marched northward against the Russians, who were advancing to assist the Prussians. At Pultusk and at Eylau he met with severe checks, but on June 14 was fought the battle of Friedland, which was so disastrous to the Russian arms that Alexander was compelled to sue for an armistice. On July 7 the Peace of Tilsit was concluded, by which the King of Prussia received back half of his dominions, and Russia undertook to close her ports against British vessels. As Portugal had refused to respect the Berlin decrees, Napoleon sent Junot to occupy Lisbon (Nov. 30, 1807).

Taking advantage of the decayed condition of the Spanish monarchy, Napoleon sent an army under Murat into that kingdom, which took possession of the capital, and by the Treaty of Bayonne Charles IV. resigned the Spanish crown, which was given to Joseph Bonaparte, Murat receiving the vacant sovereignty of Naples. The great body of the Spanish people arose against this summary disposal of the national crown, and Great Britain aided them in their resistance. Thus was commenced the Peninsular war, which lasted seven years. A French squadron was captured by the British at Cadiz (June 14, 1808); General Dupont surrendered at Baylen with 18,000 men (July 22); Junot was defeated by Sir Arthur Wellesley (Wellington) at Vimeira (Aug. 21). But Napoleon rushed to the scene of action in October at the head of 180,000 men, and entered Madrid in spite of all resistance by the Spaniards on Dec. 4. The British troops now under Sir John Moore, were driven back upon

Corunna, where they made a successful stand, but lost their general (Jan. 16, 1809).

In the meantime the Austrian emperor again declared war and got together an army in splendid condition under the Archduke Charles. Napoleon hurried into Bavaria, encountered the archduke at Eckmühl (April 22), and completely defeated him; on May 13 he again entered Vienna. On May 21 and 22 he was himself defeated at Aspern and Esslingen; but on July 6 the Austrians were crushed at Wagram, which enabled Napoleon to dictate his terms of peace.

On his return to Paris Napoleon was divorced from Josephine, who had borne him no children, and on April 2, 1810, he was married to the Archduchess Maria Louisa of Austria. The fruit of this union was a son. It was a most unhappy marriage for Napoleon, as Maria Louisa proved both heartless and dissolute.

The years 1810 and 1811 were the period of Napoleon's greatest power. On the north he had annexed all the coast-line as far as Hamburg, and on the south Rome and the southern papal provinces. But now the tide began to turn. Russia found it impossible to carry out the continental blockade and give due effect to the Berlin decrees; so in May, 1812, Napoleon declared war against that country, and invaded it with a grand army of about 500,000 men. The French pushed rapidly forward, and entered Moscow, the greater part of which was soon laid in ashes, and the remainder made uninhabitable. With disquieting news from Paris, and fearing that his army would perish if cooped up in Moscow, Napoleon decided on a retreat. The winter was very severe, and swarms of mounted Cossacks incessantly harassed the French, now sadly demoralized by cold, famine, disease, and fatigue. Of the invaders only about 25,000 left Russia. Napoleon immediately ordered a fresh conscription, but the spirit of Europe was now fairly roused. Another coalition, consisting of Prussia, Russia, Great Britain, Sweden, and Spain, was formed, which early in 1813 sent its forces toward the Elbe. Napoleon still had an army of 350,000 in Germany. He defeated the allies at Lützen, at Bautzen, and at Dresden; but

the last was a dearly bought victory for the French, who were now so outnumbered that their chief was compelled to fall back on Leipsic. There he was completely hemmed in, and in the great "Battle of Nations," which was fought on Oct. 16, 18, and 19, he was completely defeated. He succeeded in raising a new army, and from January to March, 1814, he confronted the combined hosts of allies. But numbers were against him, and Wellington rapidly advanced upon Paris from the south. On March 30 the allies captured the fortifications of Paris, and on the 31st the Emperor Alexander and Wellington entered the city. On April 4 Napoleon abdicated at Fontainebleau. He was allowed the sovereignty of the island of Elba, with the title of emperor and a revenue of 6,000,000 francs, and Louis XVIII. was restored.

After a residence of 10 months in Elba, Napoleon made his escape from the island, and landed at Frejus on March 1, 1815. Ney and a large part of the army joined him, and he made a triumphal march upon Paris; but it was mainly the army and the rabble that he now had on his side. The allied armies once more marched toward the French frontier, and Napoleon advanced into Belgium to meet them. On June 16 he defeated Blücher at Ligny, while Ney held the British in check at Quatre-Bras. Wellington fell back upon Waterloo, where he was attacked by Napoleon on the 18th, the result being the total defeat of the French. The allies marched without opposition upon Paris. Napoleon abdicated in favor of his son, and tried to escape from France to the United States, but failing he surrendered to the captain of a British man-of-war. He was conveyed to the island of St. Helena, where he was confined for the rest of his life. He died May 5, 1821, and was buried in the island, but in 1840 his remains were transferred to the Hotel des Invalides at Paris.

**Napoleon II. (Napoleon François Bonaparte)**, titular Emperor of France, son of the Emperor Napoleon I. and of Maria Louisa of Austria; born in Paris, France, March 20, 1811. From his birth he was styled "King of Rome." After his father's first ab-

dication in 1814 he went with his mother to Vienna, where he was brought up at the court of his grandfather, the Emperor Francis, who created him Duke of Reichstadt. After passing through the various subordinate grades he was made a lieutenant-colonel in June, 1831, and he took the command of a battalion of Hungarian infantry, then in garrison at Vienna. He was extremely assiduous in his military duties, but his constitution was weak. He was stricken with consumption and after a lingering illness died, July 22, 1832, in the palace of Schonbrunn, attended by his mother, who had come from Parma to visit him.

**Napoleon III. (Charles Louis Napoleon Bonaparte)**, Emperor of the French; born in Paris, France, April 20, 1808. He was the youngest son of Louis Bonaparte, brother of Napoleon I. and King of Holland, and of Hortense de Beauharnais. His early life was spent chiefly in Switzerland and Germany. By the death of his cousin the Duke of Reichstadt (Napoleon II. see above) he became the recognized head of the Bonaparte family, and from this time forward his whole life was devoted to the realization of a fixed idea that he was destined to occupy his uncle's imperial throne. In 1836 an attempt was made to seduce the garrison of Strassburg, but the affair turned out a ludicrous failure. The prince was taken prisoner and conveyed to Paris, and the government of Louis Philippe shipped him off to the United States. The death of his mother brought him back to Europe, and for some years he was a resident of England. In 1840 he made a foolish and theatrical descent on Boulogne; was captured, tried, and sentenced to perpetual confinement in the fortress of Ham. After remaining six years in prison he escaped and returned to England. On the outbreak of the revolution of 1848 he hastened to Paris, and securing a seat in the National Assembly, he at once commenced his candidature for the presidency. On the day of the election it was found that out of 7,500,000 votes Louis Napoleon had obtained 5,434,226. On Dec. 20, the prince-president, as he was now called, took the oath of allegiance to the republic. He look-

ed forward to a higher position still, however, and pressed for an increase of the civil list from 600,000 francs first to 3,000,000, then to 6,000,000, with his term of office extended to 10 years and a residence in the Tuileries. At last, on the evening of Dec. 2, 1851, the president declared Paris in a state of siege, a decree was issued dissolving the assembly, 180 of the members were placed under arrest, and the people who exhibited any disposition to take their part were shot down in the streets by the soldiers. Another decree was published at the same time ordering the reestablishment of universal suffrage, and the election of a president for 10 years. When the vote came to be taken, Dec. 20 and 21, it was discovered that 7,439,216 suffrages were in favor of his retaining office for 10 years, with all the powers he demanded, while only 640,737 were against it.

As soon as Louis Napoleon found himself firmly seated he began to prepare for the restoration of the empire. In January, 1852, the National Guard was revived, a new constitution adopted, and new orders of nobility issued; and at last, on Dec. 1, Louis Napoleon Bonaparte was proclaimed emperor under the title of Napoleon III.

On Jan. 29, 1853, the new sovereign married Eugenie Marie de Montijo, Countess de Teba. In March, 1854, Napoleon III., in conjunction with England, declared war in the interest of Turkey against Russia (see Crimean War). In April, 1859, war was declared between Austria and Sardinia, and Napoleon took up arms in favor of his Italian ally, Victor Emanuel. The allies defeated the Austrians at Montebello, Magenta, Marignano, and Solferino. By the terms of the peace of Villafranca Austria ceded Lombardy to Italy, and the provinces of Savoy and Nice were given to France in recognition of her powerful assistance (March 10, 1860). In 1860 the emperor sent out an expedition to China to act in concert with the British; and in 1861 France, England, and Spain agreed to dispatch a joint expedition to Mexico for the purpose of exacting redress of injuries, but the English and Spaniards soon withdrew. The French continued the quarrel, and an imperial form of government was initiated, Maximilian, Archduke of



Austria, being placed at its head with the title of emperor. Napoleon, however, withdrew his army in 1867, at the imperative demand of the United States, and Maximilian, left to himself, was captured and shot. On the conclusion of the Austro-Prussian war of 1866, Napoleon, jealous of the growing power of Prussia, demanded a reconstruction of frontier, which was peremptorily refused. The ill-feeling between the two nations was increased by various causes, and in 1870, on the Spanish crown being offered to Leopold of Hohenzollern, Napoleon demanded that the King of Prussia should compel that prince to refuse it. Notwithstanding the subsequent renunciation of the crown by Leopold war was declared by France. On July 28, Napoleon set out to take the chief command, and on Sept. 2, the army with which he was present was compelled to surrender at Sedan. One of the immediate consequences of this disaster was a revolution in Paris. The empress and her son secretly quitted the French capital and repaired to England, where they took up their residence at Camden House, Chislehurst. Here they were rejoined by the emperor (who had been kept a prisoner of war for a short time) in March, 1871, and here he remained till his death, Jan. 9, 1873.

**Napoleon, Prince (Napoleon Eugene Louis Jean Joseph Bonaparte)**, Prince Imperial of France, son of Napoleon III.; born in Paris, France, March 16, 1856. He joined the British army in South Africa as a volunteer and was killed by the Zulus, June 2, 1879.

**Napoli de Romania, or Nauplia**, a seaport town of Greece, 28 miles S. S. W. of Corinth. The Bay of Nauplia has excellent anchorage, and there is a good harbor for small vessels. Pop. 12,000.

**Narbonne** (Latin, Narbo Martius), a town of Southern France, department of Aude. It has dark, winding streets, a fine church (the choir only completed), a Gothic structure founded in 1272; and a castellated town-hall, formerly an archbishop's palace. The manufactures are not important. Its honey is celebrated. It became the capital of Gallia Narbonensis. Pop. (1921) 30,000.

**Narcissus**, an extensive genus of bulbous plants. The species are numerous, and from their hardness, delicate shape, gay yellow or white flow-



**NARCISSUS.**

a, *Narcissus Pseudonarcissus*; b, *Narcissus Tazetta*; c, *Narcissus Poeticus*; d, *Narcissus Jonquilla*.

ers, and smell, have long been favorite objects of cultivation, especially the daffodil, the jonquil, polyanthus narcissus, and white narcissus.

**Narcotics**, remedies which produce stupor if the dose be increased beyond a certain point. Opium is the most important member of the group, and the type from which most descriptions of the action of this class of medicines have been drawn; but it includes substances of very various properties. Some, as alcohol, produce intoxication in lesser doses; some, as belladonna, delirium; most have a primary stimulating effect; in fact, almost every one presents some peculiarity in the way in which it affects the system, and no satisfactory general description of their minor effects is possible. Other narcotics are henbane, Indian hemp, chloral, etc. All the narcotics when taken in excess are poisonous.

**Nares, Sir George Strong**, a British Arctic explorer; born near



## Narragansett Bay

Aberdeen, Scotland, in 1831. He entered the navy and took part in the Arctic expedition of 1852-1854. From 1872 to 1874 he commanded the "Challenger" during her scientific expedition, and in 1875 was first in command of the North Polar expedition. He was the author of "Reports on Ocean Soundings," "Voyage to the Polar Sea," etc. Died Jan. 15, 1915.

**Narragansett Bay**, an inlet of the Atlantic Ocean on the coast of Rhode Island; length about 28 miles; width about 12 miles. The city of Newport near its entrance, Providence near its head, and Narragansett Pier, are well-known resorts on its shores.

**Narragansetts**, a tribe of North American Indians which, in the early history of the United States, occupied the part of Rhode Island W. of Narragansett Bay. They were nearly destroyed during King Philip's war.

**Narses**, a general of the Byzantine empire; born in Persamenia, about 478. He was a eunuch, entered into the service of the Emperor Justinian at the court of Constantinople, rose by his merit to the highest dignities of the state, and distinguished himself by military exploits. After vanquishing Totila the Goth, he captured Rome; rescued Italy from the Ostrogoths and other barbarians; was appointed governor of the country, and ruled it for 15 years, but was at length deposed, and died in Rome about 573.

**Narwhal, Narwal, or Narwhale**, a cetacean, called also the sea-unicorn. The name sea-unicorn is given because the male has a horn 6, 7, or even 10 feet long, one of the teeth in the upper jaw extraordinarily prolonged. It is the left tusk which makes the horn, the right being rarely developed. The tusk is spirally furrowed, and is of ivory, like the tusk of an elephant. The length of the narwhal varies from 15 to 20 or 22 feet, the head being one-fourth of the whole, and the horn one-half. It is in its element amid the snow and ice of the 80th parallel of N. latitude. It feeds on the mollusca, and yields an oil more valuable than that of the common whale.

**Nash, William Hoyt**, an American military officer; born in Gallipolis, O., June 22, 1834; died in 1902.

## Nashville

**Nashua**, city and (with Manchester) capital of Hillsboro county, N. H.; at junction of the Nashua and Merrimac rivers and on the Boston & Maine railroad; 35 miles S. of Concord; has large water-power; and manufactures iron and steel, boots and shoes, edge tools, paper, lumber, steam engines, and cotton cloth. Pop. (1930) 31,463.

**Nashville**, the capital of the State of Tennessee; on the Cumberland river, 233 miles E. N. E. of Memphis. This city is regarded as the most important educational center in the South, and in population is the second largest city in Tennessee. It is built on undulating grounds with the exception of Capitol Hill, which is abrupt.

Nashville occupies a foremost place among the manufacturing centers of the country. It is the fifth boot and shoe market in the United States, the largest candy and cracker manufacturing city in the South, and its flouring mills have a daily capacity of more than 2,000 barrels. The iron interests of the South are largely controlled here, one company alone representing over \$100,000,000 capital employed in making coke, iron, and steel in Tennessee and Northern Alabama.

Nashville was settled in 1780; received its city charter in 1806; was made the permanent State capital in 1843. It was occupied by Union troops in 1862, and was the scene of a noted battle in 1864. About 12 miles E. of Nashville is The Hermitage, the home of Andrew Jackson, the log cabin in which he was born stands in the grounds, near his tomb. Pop. (1920) 118,342; (1930) 153,866.

**Nashville, Battle of**, a desperate battle fought near Nashville, Tenn., Dec. 15-16, 1864. In November of that year, Atlanta having been taken, the Confederate General Hood, invaded Tennessee. On Nov. 30, he advanced against Nashville, where he shut up a National force under General Thomas for two weeks. The latter then sallied out and in a terrible conflict of two days defeated the Confederates. The Union loss was 400 killed and 1,740 wounded; the total Confederate loss was estimated at 15,000.

**Nashville, University of**, a co-educational, non-sectarian institution in Nashville, Tenn., founded in 1785.

**Nasmyth, James**, a British engineer and astronomer; born in Edinburgh, Scotland, Aug. 19, 1808. He removed in 1834 to Manchester, England. The steam hammer, which has rendered possible the immense forgings now employed, was invented by him in 1839. The steam pile driver, and the safety foundry ladle, are among his other inventions. He died in London, England, May 7, 1890.

**Nason, Elias**, an American biographer; born in Wrentham, Mass., April 21, 1811; died in North Billerica, Mass., June 17, 1887.

**Nason, Emma (Huntington)**, an American poet; born in Hallowell, Me., Aug. 6, 1845.

**Nasr-ed-Din**, Shah of Persia; born April 24, 1831. He succeeded in 1848. In 1856 his occupation of Herat involved him in war with Great Britain. After that he was friendly, and made two journeys to Western Europe, in 1873 and 1889. In his reign telegraphic communication between Europe and India through Persia was secured. He was assassinated May 1, 1896.

**Nassau**, formerly a German duchy, now Wiesbaden, a district of the Prussian province of Hesse-Nassau. The soil is fertile and produces some of the most esteemed Rhenish wines. Wiesbaden is the capital of the district. The family of Nassau, the elder branch of which reigned till 1866, dates from the 10th century. The younger branch inherited in 1544 the principality of Orange, and as the princes of Orange took an important place in European history. The reigning Duke of Nassau sided against Prussia in 1866, and his duchy was incorporated with Prussia. On the extinction of the male line of the Orange branch by the death of William III. of Holland, in 1890, the Duke of Nassau became Grand-Duke of Luxemburg.

**Nassau, Fort**, an old fort on the Delaware river, near the site of the present city of Gloucester, N. J., memorable as the first settlement on the shores of the Delaware, and built by Capt Jacobus May, in 1831.

**Nast, Thomas**, an American artist; born in Landau, Bavaria, Sept. 27, 1840; was educated in the public

schools of the United States. He began early to draw and contributed illustrations to various papers. He also illustrated a large number of books, and lectured throughout the country, introducing the system of drawing on a blackboard the various characters or subjects under consideration. He is best known for his political cartoons, which were of great influence in the various political campaigns, and were effective in the exposure of the "Tweed ring." In 1902 he was appointed United States consul at Guayaquil, where he died Dec. 7, 1902, of yellow fever.

**Nasturtium**, the botanical name of the water cress; also the popular designation of the Indian cress. The genus comprises some beautiful garden climbers, such as the widely cultivated canary creeper, a native of Peru.

**Natal**, a former British colony, and since 1910 a province of the South African Union; area. 35,290 square miles; pop. (1921) 1,234,000. Its only sheltered anchorage is at Port Natal, a fine circular bay near the center of the coast. The surface is finely diversified, rising toward the lofty mountains on its W. frontiers. The chief summits are Champagne Castle 10,357 feet; Mont aux Sources, about 10,000 feet; and Giant's Castle, 9,657. The mineral productions are principally coal, ironstone, limestone, and marble; gold has also been found in various localities. The province is well watered, but none of its rivers are navigable. The climate on the whole is extremely salubrious. There are large forests on the W. and N. frontiers. The soil is generally rich and strong. In the less frequented parts of the interior elephants and lions are still occasionally seen; the leopard is not uncommon and hyenas, tiger-cats, antelopes, jackals, ant-bears, and porcupines are numerous. The hippopotamus has still his haunts in several of the rivers, and there are numbers of small crocodiles. The birds comprise the vulture, several varieties of eagle, the secretary-bird, wild turkey, etc. Natal was discovered on Christmas day, 1497, by Vasco da Gama, a Portuguese, and named by him "Terra Natalis." The first settlers were the Dutch Boers, who left Cape Colony in 1836, and in 1839 removed to Port Natal and proclaimed

## Natchez

themselves an independent republic. The establishment of a hostile settlement at the only port between Algoa and Delagoa Bays was incompatible with British interests, and in 1845 Natal, after a formidable resistance by the Boers, was proclaimed a British possession. In 1856 it was separated from Cape Colony and made a separate colony. The province of Zululand was annexed to Natal, Dec. 30, 1897. As a colony it had a governor appointed by the British crown, a Ministry of five members, a legislative council of 11 members, appointed for 10 years by the governor, with the advice of the ministry, and a legislative assembly of 39 members, elected for four years by voters having a property qualification of \$250, or paying \$50 rent per annum, or having an income of \$480. Religion is well provided for by denominational bodies, but no state aid. There are 14 government primary schools, and a large number of other primary and secondary schools, for both European and native children, are aided and inspected by the government. There are still about 700,000 acres of crown lands unalienated. Over 400 miles of railway have been constructed. The capital is Pietermaritzburg. See SOUTH AFRICA, UNION OF.

**Natchez**, a tribe of Indians, which resided in the W. part of Mississippi, near the banks of the Mississippi river. Irritated against the French, who in that region were incessantly encroaching on them, they rose, on Nov. 28, 1729, and murdered every Frenchman in the colony. On Jan. 28, 1730, they were attacked by the Choctaws under Le Sueur, and a few days after, Soubois, at the head of the French troops, completed the work of destruction. Part of the tribe escaped across the Mississippi river to the vicinity of Natchitoches, but their fortress could not long withstand the force sent against it. The chief and over 400 of the tribe were taken prisoners, and sold as slaves.

**National Arts Club**, an organization founded in 1898 in New York city, to promote the artistic side of manufacture in American arts and crafts, by the encouragement of handmade rather than machine-made articles; also to stimulate interest in the

## National Parks

embellishment of cities and public buildings.

**National Capitol**. See CAPITOL.

**National Cemeteries**, the name given to establishments, instituted by Act of Congress, for the interment of United States soldiers who had fallen in battle or died in Confederate military prisons, and whose graves become accordingly, a sacred National charge.

**National Civic Federation**, an American organization, founded in 1902 by prominent capital and labor leaders, as the result of various conventions, its objects being to prevent strikes, settle labor disputes, arbitrate, and promote industrial peace.

**National Gallery**, **The**, the British national picture-gallery, situated in Trafalgar Square, London, which originated in a collection of 38 pictures, 29 by old masters and 9 by British painters, purchased with public funds in 1824 for £57,000 as the nucleus of a national gallery. Since that time the collection has been greatly enlarged by purchases out of moneys provided by Parliament, as well as by bequests and gifts.

**National Monuments**, official name given to various natural antiquities, wonders, etc., placed under the immediate control of the Secretary of the Interior by Act of Congress approved June 8, 1906. In 1916 these included: Devil's Tower, Wyo.; Montezuma Castle, Ariz.; Petrified Forest, Ariz.; El Morro, N. M.; Chaco Cañon, N. M.; Muir Woods, Cal.; Natural Bridges, Utah; Lewis and Clark Cañon, Mont.; Tumacacori, Ariz.; Navajo, Ariz.; Mukuntuweap, Utah; Shoshone Cavern, Wyo.; Gran Quivira, N. M.; Sitka, Alaska; Rainbow Bridge, Utah; Pinnacles, Cal.; Colorado, Col.; Papago Saguaro, Ariz.; Copulin Mountain, N. M.; Sieur de Monts, Me.; and Dinosaur Monument, Utah. The Secretary of Agriculture has control of nine other monuments and the Secretary of War controls two others, the Big Hole Battlefield, Mont., and Cabrillo, Cal.

**National Parks and Reservations**, certain public lands of the United States which have been reserved from settlement, and are retained and improved by the United States government as National parks. These reservations in 1917 were:

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Name.	Location.	Area (acres).	Special characteristics.
Hot Springs Reservation.	Arkansas .....	911,631	Famous for its thermal springs, having wonderful medicinal qualities.
Yellowstone .....	Wyoming, Montana, and Idaho.	2,142,720	Wonderful scenery, geysers, boiling springs, mud volcanoes and springs, mountains, grand waterfalls, brilliant-hued canyons, great lake 8,000 feet above the level of the sea; wild animals. These ruins are one of the most noteworthy relics of a prehistoric age and people within the limits of the United States.
Casa Grande Ruin.....	Arizona .....	480	The home of the "Big Tree" (Sequoia gigantea), growing to a height of 300 feet with diameter of 30 feet and bark 2 feet thick; rugged and picturesque scenery, beautiful cascades and falls, and wonderful caves.
Sequoia .....	California .....	161,597	Mountain scenery, magnificent waterfalls, the Hetch Hetchy and Yosemite Valleys, ice-sculptured canyons, glacial lakes, forests.
Yosemite .....	do .....	719,622	The home of the "Big Tree" (Sequoia gigantea), growing to a height of 300 feet with diameter of 30 feet and bark 2 feet thick; rugged and picturesque scenery, beautiful cascades and falls, and wonderful caves.
General Grant.....	do .....	2,536	Glaciers and wild mountain scenery.
Mount Rainier.....	Washington .....	207,360	Rugged mountain scenery, beautiful lake within the crater of an extinct volcano, etc.
Crater Lake.....	Oregon .....	159,360	Well known by reason of a cavern therein having many miles of galleries and numerous chambers of considerable size containing many peculiar formations.
Wind Cave.....	South Dakota.....	10,522	Noted for its promide and other springs, the waters of which have medicinal qualities; park well wooded, scenery picturesque.
Platt .....	Oklahoma .....	848,222	Small rugged hills. Practically a local park. Government game preserve.
Sullys Hill.....	North Dakota.....	750	Set aside to preserve the prehistoric ruins of an ancient people; rugged scenery.
Mesa Verde.....	Colorado .....	42,376	Famous for its beautiful lakes derived from glaciers, lofty mountains clad with forests, magnificent glacial formations, numberless waterfalls. Game, fish, and birds abundant.
Glacier .....	do .....	48,966	Rugged mountain scenery comprising some of the loftiest snow-covered lakes, valleys, and parks.
Rocky Mountain.....	Colorado .....	229,062	Three separate areas embracing the celebrated volcanoes, Killdeer, Mauna Loa, and Haleakala; lava caves, cones, tropical forests.
Hawaii .....	Territory of Hawaii....	75,295	Active volcano; mud geysers; ice caves; majestic canyons.
Laassen Volcanic.....	California .....	79,561.58	



**Nations, Law of.** By national law, or the law of nations, is to be understood that portion of public law which concerns the rights, duties, and obligations of nations.

**Natural Bridges,** technically refers to those arches which span some valley of erosion, while the term Natural Arches includes all the other mis-called Natural Bridges. In general Natural Bridges are formed by the meandering of a stream in such a manner that when an ox-bow loop is cut off, the river has undercut its banks so far that when it connects with the other side of the loop a natural bridge is left. The stream then quickly abandons its old course around the loop, and passes under the new bridge.

Another type of Natural Bridge occurs in the limestone country. Here the underground streams leach, or dissolve out great quantities of the limestone along their courses, forming great caves such as the Mammoth Cave in Kentucky. Centuries afterward, when the rooms of the caves become very large, the roof begins slowly falling in, until only a remnant of the roof remains. This remnant is then known as a Natural Bridge.

Natural Bridges are sometimes formed at waterfalls. In this case the water seeps down along the joints instead of passing over the falls. Gradually it dissolves out a larger and larger passageway until it robs the falls of their water entirely. Then in a short time, geologically, we have a bridge so natural that the public marvels as to how it could have been formed.

Still another type of Natural Bridge occurs where a sheet of lava overflows valley deposits of glacial debris. In this case the stream gradually carries out the loose material below, leaving the hard lava above.

Small Natural Bridges are formed by 'pot-hole' action. Two pot-holes near each other often join thru the grinding action of the stones which wear such large bottoms that they allow water to pass from one pot-hole to another. This will in time form a neat little bridge but always one of small size. Other small bridges have been formed by streams cutting under large petrified logs. A good example

of this may be found in the Petrified Forest of Arizona.

In mountainous regions where erosion is rapid the valleys are often very deep and narrow. In such places large boulders from the mountain above often crack off, and become wedged in the top of the gorge. Other material falling in around the boulder is also retained, and soon a passable bridge is open to traffic. In the same sort of region large pieces of mountain which form the sides of deep narrow valleys, split off and close the valley at its top, but leave the bottom undisturbed.

In California the waves of the ocean sometimes cut great caves back into horizontal formations along the shore. Then when the back parts of these caves drop in, a natural bridge remains. While there have been several of these bridges known, they have all been very short lived.

There are over 38 Natural Bridges in North America, the one in Virginia being the best known, but lacking much of being the largest. It has a span of 60 feet, and is about 200 feet high, while the largest known is in South-Eastern Utah and has a span of 273 feet and a height of 308 feet.

**Natural Gas,** carburetted hydrogen, issuing from the earth in springs or wells. The fire damp of coal mines is practically the same gas, which was produced during the formation of the coal from vegetable matter and is set free by the miner's pick. The first extensive use of this gas was at Fairview, Pa. In 1875 it was first applied to iron smelting; and in 1886 it was brought to Pittsburgh, 19 miles, and introduced as a substitute for all other kinds of fuel. The output in 1922 reached a value of \$220,000,000, the highest record.

**Natural History,** an indefinite term used in different senses by different authors. It was originally applied to the study of all natural phenomena, but later, as science developed, astronomy and chemistry became separate sciences. In like manner, physics, geology, mineralogy, palaeontology, botany, and zoölogy, which had grown out of Natural History, became separate sciences, leaving Natural History the Mother



Science of them all with nothing but a name.

At the present time, Natural History is used by some to include all of the above mentioned sciences, by others the organic sciences, and by still others only zoology. However it is understood that Natural History means the study of whatever phenomena it is to include in a natural way and in its natural surroundings.

**Naturalization**, in law the act of placing an alien in the position, or investing him with the rights and privileges of a natural-born subject. The naturalization laws of the United States are wholly of Federal enactment; the attendant privileges are vested in the State legislatures, and, like many other laws, vary materially.

**Natural Philosophy**, a term still frequently employed to designate Physics, or the branch of physical science which has for its subject those properties and phenomena of bodies which are unaccompanied by any essential change in the bodies themselves.

**Natural Selection**, a term first used by Darwin to account for the origin of the species. The idea was that, since all life is constantly undergoing a change, and since Nature always produces a surplus of offspring; only those individuals who are best fitted to survive will survive and reproduce. The others, less splendidly endowed, die out and disappear. While one sees many apparent exceptions to the above theory, it is held, that, in the vast majority of cases it proves true, and so life has continued and will continue to improve throughout the ages.

**Naval Academy, United States**, a technical, educational institution, established in Annapolis, Md., by Act of Congress, in 1845, through the exertions of George Bancroft, then Secretary of the Navy. It was formally opened Oct. 10 of that year, with commander Franklin Buchanan as superintendent. During the Civil War it was removed from Annapolis, Md., to Newport, R. I., but was returned to the former place in 1865. It is under the direct supervision of the Bureau of Navigation, Navy Department. The course of naval cadets is six

years, the last two of which are spent at sea. They enter the academy immediately after passing the prescribed examinations, and are required to sign articles binding themselves to serve in the United States navy eight years (including the time of probation at the Naval Academy), unless sooner discharged. The pay of a naval cadet is \$780 a year, beginning at the date of admission.

**Naval Establishments** (United States). These include naval stations at Cavite, P. I.; Guantnamo Bay, Cuba; Guam; Key West, Fla.; New London, Conn.; New Orleans, La.; Newport, R. I.; Olongapo, P. I.; Pearl Harbor, Hawaii; San Juan, P. R.; Tutuila, Samoa; Virgin Islands. Submarine bases are found at Cavite, P. I.; Coco Solo, C. Z.; Hampton Roads, Va.; Key West, Fla.; New London, Conn.; Pearl Harbor, Hawaii; Astoria, Ore. Torpedo stations are: Alexandria, Va.; Newport, R. I.; Keyport, Wash. U. S. Navy Yards: Washington, D. C.; Boston, Mass.; Portsmouth, N. H.; New York, N. Y.; Philadelphia, Pa.; Norfolk, Va.; Charleston, S. C.; Mare Island, Cal.; Pearl Harbor, Hawaii; Puget Sound, Wash.

**Naval Fleet**. The fleet of a navy when prepared for conducting active warfare comprises a great variety of types of ships. The following were the general classes prior to the World War, when all belligerent navies were secretly reorganized:

**Monitors**.—The best type of modern harbor-defense vessel undoubtedly is the monitor. Its chief advantage lies in the fact that so little of the vessel is out of water.

**Cruisers**.—The cruiser has a much wider sphere of action. It is designed to prey on the enemy's commerce and drive it from the sea, to ravage his coast at unprotected points, and to wage minor wars in distant waters. Great size is a desideratum, great coal-carrying capacity a necessity, and highest speed indispensable. Even her armament must be subordinated to these, for her duty is primarily to ascertain where the enemy is, and having done so, hasten at topmost speed to impart this information to the fighting fleet.

**Protected and Armored Cruisers**.—A protected cruiser is not an armored

ship, but the protection of the cruiser is horizontal, in the form of a steel deck covering over the interior of the ship at her water-line, and curved down at the sides. All recently constructed cruisers are protected. The unprotected cruiser is a cruiser without this steel deck, and the partially protected cruiser has the steel deck over only engines, boilers, and magazines. An armored cruiser, always so designated in contradistinction to a cruiser, is a type of ship midway between the cruiser and the battleship. Sometimes she inclines more to the one than to the other. The title armored cruiser indicates quite well what is expected of this type of warship—to cruise and to fight. She must have good speed, large coal capacity, moderately thick armor, and an excellent battery.

**Battleships.**—The great fighting unit in a fleet is the battleship. Her armor is the most invulnerable, her guns are the heaviest, and the qualities of the cruiser and armored cruiser are more or less subordinated to secure this preponderance of protection and armament. The most noticeable thing in recent naval construction, however, is the narrowing of the difference between the battleship and the armored cruiser. The latter, in some cases, now equals the largest battleship in displacement, while the latest battleships have very nearly the speed of the fastest armored cruisers. The battleship is common to all navies the world over, the monitor is found only in the United States.

**Torpedo Craft and Sentries.**—The torpedo boat is a good craft for coast-defense work, and in smooth water on a dark night she may shoot her bolt with effect, but she is of little use in heavy weather. The torpedo-boat destroyer—merely a large and swift torpedo-boat—is used to guard against her attacks. It can keep the sea and thus work with the fleet.

**Tugs.**—These are improvised sentries used to steam about within a few miles of a squadron, watching for night attacks of torpedo-boats and other prowling enemies.

**Submarine Boats.**—These are adapted for under-water service, and can navigate beneath the surface for a considerable time and distance. Are very useful for harbor defense.

**Gunboats.**—The regularly con-

structed gunboat is a larger craft, partaking of the nature of a cruiser. The gunboat proper is but a small cruiser, in which speed and coal-carrying capacity are slighted in order to permit of the mounting of a strong battery. The duties of the gunboats are quite like those of cruisers, though not so extensive. When fleets go to war they must be accompanied by many auxiliary vessels, non-combatants, but none the less indispensable to the welfare of the squadron. For instance the boilers of modern men-of-war should be fed with fresh water. On the blockade and away from bases, cruising, this is not obtainable; the time and coal needed to condense water cannot be spared, hence—

**Distilling Vessels.**—These are a component part of a well equipped war fleet. Such auxiliaries mount but a couple of small guns to repel boat attacks.

**Repair Ships.**—A repair ship is another important adjunct. Such a ship is fitted up like a machine shop, carrying spare plates, tools and extra portions of machinery.

**Hospital Ships.**—With the fleet there is also a hospital ship, fitted with wards, operating rooms, modern appliances for surgical operations and for caring for the sick and carrying a large corps of trained nurses. In the United States navy this ship is painted white and flies the Red Cross flag, so that the foe may know her mission is sacred. She is absolutely unarmed.

**Colliers.**—Most important, however, of all these auxiliaries is the collier. Indeed, the limit of offensive sea operations is the limit of the coal. Stop the supply of coal and the fleet must give over fighting on the sea and return home. A collier carries nothing but coal, everything being sacrificed to make room for bunkers and the machinery to take in and eject coal most expeditiously.

**Refrigerating Ships.**—Still another adjunct is the refrigerating ship, with an ice manufactory on board and immense cold-storage rooms for carrying fresh food.

**Naval Order of the United States.**—an organization composed of a General Commandery and commanderies in several States. The General Commandery meets triennially on Oct.

**N**, and the State Commanderies meet annually in the month of November. The Massachusetts Commandery is the parent Commandery, and was organized at Boston on July 4, 1890. The General Commandery was established three years later, on June 19, 1893. The companions of the order are officers and the descendants of officers who served in the navy and marine corps in any war or in any battle in which the naval forces of the United States have participated.

**Navarino**, a seaport of Greece, on the S. W. coast of the Morea, near the site of the ancient Pylos, the scene of the defeat of the Turco-Egyptian fleet under Ibrahim Pasha by the allied fleets of Britain, France, and Russia, under Sir E. Codrington, 1827.

**Navarre** (Spanish, Navarra), a former kingdom, now a province of Spain, between Aragon, Old Castile, and Biscay; area, 4,055 square miles; pop. (1920) 316,144, its north. boundary is very mountainous, being composed of the western slopes of the Pyrenees, which by their numerous streams supply the Ebro and Bidassoa, its principal rivers. Extensive forests clothe the mountain slopes, but the lowlands produce wheat, maize, wines, oil, flax, hemp, and all sorts of leguminous plants, as well as abundant pastures for cattle of every description. Iron, copper, lead, etc., are among the minerals. The capital is Pamplona. The ancient Kingdom of Navarre comprised both the modern Spanish province, sometimes called Upper Navarre, and also French or Lower Navarre, separated from the former by the Pyrenees, and now comprised in the departments of Basses Pyrénées, and Landes. Ferdinand the Catholic annexed Upper Navarre to Castile in 1512, while the north portion ultimately passed, with Henry IV., to the crown of France.

**Nave**, in Gothic architecture, that part of a church extending from the western entrance to the transept, or to the choir and chancel, according to the nature and extent of the church.

**Navel**, in anatomy, the cicatrix of the umbilicus which causes a narrow and deep impression on the surface of the abdomen; it marks where the fetus was attached to the placenta by the umbilical cord.

**Navies and Navigation.** The origin of the art of navigation is lost in antiquity, but we know that it was practised with considerable skill by the ancient Phœnicians, who were distinguished as a seafaring people long before the rise of Greece and Rome. Tyre, a colony from the more ancient seaport Sidon, was a flourishing commercial city as early as 1200 B. C. From this city the Phœnicians pushed their commerce with a spirit and daring which, considering their opportunities, have never been surpassed. Greece succeeded as the leading commercial country, having a rival in Carthage, but the seagoing activity of the Roman Empire was mainly confined to the Mediterranean, and after the fall of this empire naval enterprise declined. It began to revive in the age of Charlemagne, and during the succeeding period the piratical Northmen showed a daring that led eventually to the discovery of America. The Italian cities, chiefly Venice and Genoa, led in the later development of commercial enterprise, in which they were followed by the Portuguese. The discovery of the mariner's compass in this era brought on a new boldness in navigation, leading to the circumnavigation of Africa and the bold enterprise of Columbus. In later years the English and Dutch became the leaders in navigation, in which finally all the maritime nations of Europe took part, and the foundations of the great seafaring activity of the present day were laid.

Naval warfare in the past had its greatest development in the Roman period and its chief field in the Mediterranean. During the mediæval age the great naval battles were fought by the fleets of the Italian republics and by them against the Turks, and in the later period England, Holland and France became active in naval warfare, England finally claiming the title of "Mistress of the Seas." This, in the war of 1812-15, it lost to the daring seamen of the young American republic. During the ages named many improvements in naval architecture took place, for the most important of which the United States may claim the honor, since it was the first to prove the superiority of iron-clad vessels in warfare. The famous

battle of the "Monitor" and the "Merrimac" gave an impulse to the building of iron-clad, and subsequently of steel clad, warships, which has spread around the world, all the great nations now competing in the effort to produce the most effective floating fortresses of this kind. In this contest for supremacy Great Britain has taken the lead, but is now being closely competed with by Germany and the United States, each of which is rapidly adding to its powerful ships of war.

In this direction the greatest and most spectacular event that the world has ever seen was the notable feat performed by the United States in 1908-1909, that of circumnavigating the globe with one of the most powerful fleets of battleships that ever floated on the world of waters, and bringing it back to its starting point none the worse for its voyage of over 42,000 miles. Setting out from Hampton Roads December 16, 1907, this grand fleet of sixteen great battleships, with the necessary auxiliary vessels, sailed down the east and up the west coast of South America, stopping at Rio de Janeiro, Valparaiso, and other ports, and reaching San Francisco May 6, 1908. Thence it crossed the Pacific to Honolulu, sailed southward to Auckland, New Zealand, and to Sydney and Melbourne, Australia, and northward again to the home port of Manila. Its next stopping points were Yokohama, Japan, and Amoy, China, and after a return to Manila it set out on its long journey home via the Suez Canal and the Mediterranean, reaching its starting point at Hampton Roads on the 22d of February, 1909. This remarkable voyage enlisted the admiration and astonishment of the world. At the beginning of 1911 the United States ranked second among the nations in naval tonnage afloat, between Great Britain and Germany.

**Navigation Laws.** Very little change has been made in the navigation laws of the United States since their adoption in 1792-1793. The main features of these laws may be summed up as follows: No vessel, unless entirely built in this country and wholly owned and officered by Americans, is considered an American vessel having the right to be protected by the American flag. No foreign vessel is permit-

ted to engage in the American coasting trade, the same extending from Atlantic to Pacific ports. American vessels are no longer considered as such if even a part-owner resides abroad for a short time. Transfer of an American vessel to foreigners prohibits it from ever again sailing under the American flag. If an American vessel makes any repairs in a foreign port, duty must be paid on the value of all such repairs on her return to this country. A tax of six cents per ton of their burden, called a tonnage tax, is imposed on all vessels (except fishing and pleasure vessels) engaged in trade to ports not in North or Central America, the maximum aggregate tax in any one year not exceeding 30 cents. Foreign vessels pay the same tax, but if one of the officers of an American vessel is a foreigner, it is forced to pay an additional tax of 50 cents. Materials for the construction of vessels for foreign trade may be imported free of duty, but the duty must be paid if the vessel engages for more than two months a year in the coasting trade. American vessels may unload at any port of delivery in the customs district, but foreign vessels can only discharge their cargoes at a port of entry. Exceptions are made when they are laden with coal, salt, etc., in bulk.

**Navy,** a fleet; the shipping of a country collectively; the war-ships belonging to a country collectively; including the officers, men, armaments, etc., intended for use in war. See NAVAL FLEET.

**Navy, Department of the,** an executive department of the United States government, created in 1798. The Secretary of the Navy is a member of the Cabinet, appointed by the President and confirmed by the Senate. His salary is \$15,000. To this department belongs the charge of the vessels, navy yards, guns, and whatever belongs to the navy. Under its supervision is the hydrographic office, in which charts, sailing directions for the use of steamers and the "Nautical Almanac," are prepared. The Department consists of a number of Bureaus the heads of which are chosen from active officers. They hold office four years and draw the sea-pay of their rank.

**Navy Yards.** The principal navy yards of the United States in 1928 were: New York (Brooklyn, N. Y.); Mare Island, Cal.; Norfolk (Portsmouth, Va.); Portsmouth, N. H. (Kittery, Me.); Boston (Charlestown, Mass.); League Island (Philadelphia); Washington, D. C.; Puget Sound, Wash.; Charleston, S. C.; and New Orleans. There are also several naval stations, the important ones being in Boston, Mass.; Newport, R. I.; Indian Head, Md.; Norfolk, Va.; Bremerton, Wash.; Port Royal, S. C.; Portsmouth, N. H.; Philadelphia, Pa.; Cavite and Olongapo, P. I.; San Juan, Porto Rico; Tutuila, Samoa; Guam, Ladrones; Guantanamo, Cuba; Honolulu, H. I.; Sitka, Alaska; Culebra, W. I.; Yokohama, Japan; Key West, Fla.; Yerba Buena Island, Cal., and N. Chicago, Ill. (both for training); and Pensacola, Fla. (aeronautic). The Naval War College is at the Newport, R. I., station. In the early history of the navy, nearly all the vessels were built at navy yards, but the modern steel warships have been built chiefly by private firms.

**Naxos, or Naxia,** an island of the Grecian Archipelago, the largest of the Cyclades; length 18 miles; breadth, 12 miles; area, 164 square miles; pop. about 15,000. Chief town is Naxia (or Naxos).

**Nazarenes,** a name applied reproachfully to the early Christians by the Jews. Also a heretical sect from among the Judaizing Christians of Hebrew descent, so frequently in conflict with St. Paul, which arose about the end of the 1st century.

**Nazareth,** the home of Jesus, anciently in the district of Galilee, 21 miles S. E. of Acre, still a small but flourishing town of Palestine. It lies in a hilly tract of country, and is built partly on the sides of some rocky ridges. In the earliest ages of Christianity Nazareth was quite overlooked by the Church. The principal building is the Latin convent, on the supposed scene of the Annunciation; but the Greeks have also erected on another spot a church in commemoration. The women of the village have long been famous for their beauty.

**Nazarite,** in the Jewish Church, a man or woman set apart by a vow

for the service of God, either for a definite period or for life. The hair was allowed to grow, the fruit of the vine in any shape was forbidden, and no Nazarite might approach a corpse.

**Neal, John,** an American poet and author; born in Falmouth, Mass., (now Portland, Me.), Aug. 25, 1793. He was a member of the Society of Friends, but left it at 25. Later in life he figured as editor, lecturer, lawyer, poet, novelist, and teacher of gymnastics. He died in Portland, Me., June 21, 1876.

**Neal, Joseph Clay,** an American journalist and humorist; born in Greenland, N. H., Feb. 3, 1807. He was editor of the "Pennsylvanian" 1831-1844, when he founded the "Saturday Gazette." He died in Philadelphia, Pa., July 18, 1847.

**Neap Tides,** those tides which happen in the middle of the second and fourth quarters of the moon, taking place about four or five days before the new and full moons. They occur when the attractions of the sun and moon act on the waters of the ocean at right angles to each other.

**Nebo,** a mountain of Moab, whence Moses had a view of the Promised Land, and where he died. It is a summit of the range Abarium, "over against Jericho." Travelers do not observe any very prominent summit in the range immediately opposite Jericho; but it has not yet been fully explored. In Babylonian mythology, an idol which probably represented the planet Mercury. It was also worshiped by the ancient Arabians.

**Nebraska,** a State in the North Central Division of the North American Union; admitted to the Union, March 1, 1867; capital, Lincoln; area, 77,520 sq. m.; pop. (1920) 1,296,372; (1930) 1,378,900.

The State is situated in the great central plain of North America, and has a flat or undulating surface, with a slight inclination S. E. On the N. W. is an extensive desolate tract of land known as the Mauvais Terres or Bad Lands, rich in interesting fossil remains. Timber has been extensively planted here of late. The principal rivers are the Missouri, which forms the boundary on the E.; its great affluent, the Nebraska or Platte,



which, formed by two main forks, from the Rocky Mountains, traverses the territory in an E. direction; and the Republican Fork at Kansas river, traversing the S. part of the State.

The soil, excepting in the N. W., is a deep, rich loam underlaid by a porous clayey subsoil, and is admirably adapted to withstand drought. The climate is equable, and on the whole fine. The forest trees include cedar, linden, cottonwood, hackberry, pine, and spruce. Considerable attention is paid to forestry. The principal growth of timber, cottonwood, is found along the river banks. The even temperature, fertile soil, and extensive farm area, make Nebraska an important agricultural State. The principal farm crops are corn, wheat, oats, potatoes, hay, barley, rye, and buckwheat. In 1925 the estimated value of all farm property was \$2,874,477,959. There were 127,734 farms, comprising 42,024,755 acres, 20,698,098 acres of which were crop land. In 1929 farm crops were produced as follows: 237,744,000 bu. of corn; 56,555,000 bu. of wheat, and 86,304,000 bu. of oats. On Jan. 1, 1929, it was estimated that there were in the State 757,000 horses, 98,000 mules, 638,000 milch cows, 3,048,000 other cattle, 1,208,000 sheep and 5,274,000 swine.

The most important manufacturing interests are associated with packing and agriculture. In 1927 there were 1,277 manufacturing plants employing 26,110 wage earners, paying \$34,296,000 in wages, \$326,917,000 for raw materials and yielding combined products valued at \$420,296,000.

Nebraska is included in Federal Reserve District No. 10 of which Kansas City, Mo., is the central reserve city. There are 157 National Banks in the State with total resources of \$2,572,000,000, demand deposits of \$114,355,000 and time deposits of \$55,359,000. There are \$166,900,000 in savings deposits in the various State Banks and Trust companies.

In 1928 there were 6,174 miles of steam and 192 miles of electric railroads in the State, the former representing eight of the great systems.

In 1928 there were 325,783 pupils and 14,216 teachers in public elementary and secondary schools. For higher

education, there were 591 public high schools with 3,408 teachers and 70,395 pupils besides the State University, four normal schools and 17 colleges and technical schools. The total expenditure for public elementary schools was \$26,898,000. Nebraska has always been noted for having an exceptional educational system, the average number of illiterates over fifteen years of age has been less than 2.0% for the past ten years.

A grant of 3,000,000 acres of public land for a permanent endowment of schools was made by the Federal Government and there are 1,661,405 acres still held by the State. Further sale of the land with some minor exceptions is forbidden, Nebraska being the only state that has adopted this policy. The total value of the school endowment is \$21,564,714.

In 1925 it was estimated that there were around three thousand religious organizations with over three hundred thousand members. The strongest denominations were the Roman Catholic, Methodist, Lutheran, Presbyterian, and Baptist.

In 1927 the state revenue was \$17,286,726; expenditures, \$20,221,243; no state debt; total assessed property valuation, \$3,321,741,538; tax levy per capita, \$4.21.

The governor is elected for a term of two years and receives a salary of \$7,500 per annum and his residence. The Legislative sessions are biennial and limited to 60 days each. The Legislature in 1928 had 33 members in the Senate and 100 in the House, each of whom receives \$600 per annum, and mileage. There were 6 representatives in Congress.

Nebraska was originally a part of the Louisiana Purchase, and was for a long time part of the Northwest Territory. The overland emigration to California in 1849 brought about a general settlement of this region, and a Territory was organized in 1854 under the Kansas-Nebraska Bill. From the area of this Territory were taken part of Colorado, Montana, Wyoming, and the Dakotas. In 1867 the Union Pacific railroad was completed across Nebraska, the Territory was admitted to the Union as a State, and the cap-

ital was removed from Omaha to Lincoln.

In 1883 the State granted school suffrage to women. In 1914 full suffrage was defeated by popular vote. Local option prevailed till 1916, when the State adopted prohibition. Four cities are under commission government.

**Nebraska, University of, a co-educational non-sectarian institution in Lincoln, Neb.;** founded in 1869.

**Nebraska Wesleyan University, a coeducational institution in University Place, Neb.;** founded in 1887 under the auspices of the Methodist Episcopal Church.

**Nebuchadnezzar, or Nebuchadnezzar,** surnamed The Great, a king of Babylon, the son and successor of Nabopolassar, the founder of the Babylonian empire. While associated with his father in the government, Nebuchadnezzar commanded an expedition against Egypt, and won a great victory at Carchemish, B. C. 605. Hearing of his father's death, he returned in haste to Babylon, and peaceably entered on his heritage. Three years afterwards, he led another expedition westward to suppress a rebellion stirred up by Egypt. He invested Tyre, captured Jerusalem and put Jehoiakim, King of Judah to death, B. C. 598. He made Jehoiachin king in his place, but shortly afterward removed him, and carried him with many prisoners and treasures from the Temple to Babylon. He finally destroyed Jerusalem, B. C. 588, after a siege of eighteen months, which he undertook to punish the rebellion of Zedekiah, whom he had made successor to Jehoiachin. He stripped the Temple and burned it and the chief buildings of the city, broke down the walls and took the principal citizens captive to Babylon. The only knowledge that we have of his later life is the meagre record contained in the historical chapters of the book of Daniel. It was to this king that the Jewish captive Daniel interpreted the dream that so truly foreshadowed the fall and ruin of his empire. The celebrated hanging gardens of Babylon, one of the seven wonders of the world, were executed by this monarch, to please his beautiful wife, a Median princess. He died 562 B. C.

**Nebula, plural Nebulae,** in astronomy, a slight cloudy patch of light, retaining its form unchanged except under keen and long-continued observation. More than 8,000 nebulae, or star-clusters closely resembling them, have been found in both hemispheres, and in nearly every constellation. A few are visible on very clear nights to the naked eye; the rest are telescopic.

**Nebular Hypothesis,** in astronomy, a hypothesis first suggested by Sir William Herschel. It was developed by La Place, with whose name it came to be associated. The hypothesis assumes that originally all suns were in a nebulous or ultra-gaseous state. The nebulous matter from which they were originally formed was at first scattered pretty uniformly through all space, but ultimately began to gravitate toward certain centers. The particles moving toward these centers not doing so with equal velocities or in the same direction, rotation would be established in the entire nebulous mass, and the spherical form produced. If, by radiation of heat, the condensed body still further contracted, its velocity would increase. If the centrifugal force overcame that of gravity, a ring would be thrown off, which would gradually become globular, in fact it would be a planet with an orbit almost or quite circular, moving in a plane nearly that of the central body's equator and revolving in its orbit in the same direction in which the central globe rotated. Further contraction producing increased velocity, ring after ring would be cast off, till the central body or sun generated a whole system of planets revolving around it. They, in turn, might in the same way produce satellites. La Place believed that the sun thus produced our earth and the other attendant planets. On this hypothesis the rings of Saturn were produced by Saturn himself, and have remained in the annular form instead of condensing into nearly spherical satellites.

**Necessity, Fort,** a defensive work near the site of the present borough of Union, in Fayette co., Pa.; built by Washington in 1754.

**Necker, Jacques,** a French statesman; born in Geneva, Switzerland, Sept. 30, 1732. In 1765 he was ap-

pointed syndic of the French East India Company; in 1775, director of the royal treasury, and was twice director-general of the finances of France. But the Revolution, which all his efforts were unable to check, obliged him to retire to Switzerland. Necker wrote three volumes on the finances of France, a book on the influence of religious opinions, and other works. He married the daughter of a Protestant clergyman, by whom he had a daughter, Madame de Stael-Holstein, the wife of the Swedish ambassador. She afterward became celebrated by the name of Madame de Stael. He died in Coppet, Switzerland, April 9, 1804.

**Necromancy**, the divination of the future by questioning the dead. This superstition originated in the East, and is of the highest antiquity. Mention is made of necromancy in the Scriptures, where it is strongly condemned. In the "Odyssey" Homer has made Ulysses raise the shade of Tiresias from the infernal regions. In many parts of Greece there were oracles of the dead, the origin of which is lost in the obscurity of history. Though this practice has been condemned by the Christian Church from the very first, it has not yet entirely ceased. Modern spiritualism embodies all the elements of necromancy. The term is often extended so as to include the general art of magic.

**Necropolis**, a Greek term, meaning "the city of the dead," and applied to the cemeteries in the vicinity of ancient cities.

**Necrosis**, a word used as synonymous with mortification or gangrene; but it is more commonly used in surgery to denote the death or mortification of a part or the whole of a bone. Necrosis differs from caries of a bone, inasmuch as in the latter case the vitality of the bone is only impaired, not destroyed, as in the former; in the same way an ulceration of the soft parts differs from gangrene. Necrosis is found in either sex, and at all periods of life, and may be occasioned either by external causes, as fractures, contusions, etc., or by internal or constitutional causes, as a debilitated or deranged habit of body. When a portion of a bone becomes dead, it is regarded as an extraneous substance.

**Nectar**, in Greek mythology, the supposed drink of the gods.

**Nectarine**, a fruit which differs from the peach only in having a smoother rind and firmer pulp, being indeed a mere variety of peach.

**Needle**, a small instrument of steel pointed at one end, and having an eye or hole in it through which is passed a thread, used for sewing.

**Needle Gun**, a firearm which is loaded at the breech with a cartridge carrying its own fulminate, and which is ignited by a needle or pin traversing the breech-block driven by a spiral spring, or struck by the hammer.

**Needles, The**, a cluster of insulated chalk rocks in the English Channel, off the W. extremity of the Isle of Wight. They owe their name to their pyramidal and pointed shape. The Needles Lighthouse, on the most W. of the group, has an occulting light 80 feet above high-water, visible for 14 miles.

**Ne exeat** (Latin for let him not go out), in law a writ to restrain a person from leaving the country, originally applicable to purposes of state; now an ordinary process of courts of equity, resorted to for the purpose of obtaining bail or security to abide a decree.

**Negley, James Scott**, an American military officer; born in Liberty, Pa., Dec. 22, 1826; served as a private in the Mexican War; and when the Civil War broke out in 1861 raised a brigade in eight days, of which he was made Brigadier-General; was in the Army of the Ohio, and took part in the battles in Alabama and Tennessee; commanded the Union forces at the battle of Laverne, Tenn., when the Confederates under Anderson and Forrest were defeated; was promoted Major-General of volunteers for gallant conduct at Stone river; resigned his command shortly after the battle of Chickamauga, and for many years lived in Plainfield, N. J., where he died Aug. 8, 1901.

**Negritos**, the name given to certain Negro-like tribes inhabiting the interior of some of the Philippine Islands, and differing both in features and manners from the Malay inhabitants of the Eastern Archipelago. They seem to be more closely akin to the Andaman Islanders than to either

Papuans or any other stock; and are also known as Aetas or Itas. The name is also used in a wider sense for the Papuans and all the Melanesian peoples of Polynesia.

**Negro**, the distinctively dark, as opposed to the fair, yellow, and brown varieties of mankind. Their original home was probably all Africa S. of the Sahara, India S. of the Indo-Gangetic plains, Malaysia and the greater part of Australasia. In early and middle Tertiary times this tract was probably broken up by the sea and the disappearance of the region named by Sclater Lemuria. Negroes fall naturally into two great divisions: (1) African Negroes, (2) Papuans or Melanesians. Prof. A. H. Keane makes four sub-divisions of African Negroes, according to locality: (1) West Sudan and Guinea; (2) Central Sudan and Chad Basin; (3) East Sudan and Upper Nile; (4) South Africa. He estimates their number at 130,000,000, with probably 20,000,000 full-blood or half-caste Negroes, either slaves or descendants of slaves, chiefly in America.

**Negros**, an island in the Philippine group, between Panay and Cebu; area, 4,854 square miles; pop. (Est.) 600,000. In the S. W. is the mountain chain of Sojatas, and lying N. and N. E. of this are large plains cut by numerous rivers. The interior has not been explored. The island is divided into two provinces, Occidental and Oriental Negros. The former is fertile, and owing largely to the work of various European settlers, is in the front rank of all the provinces of the archipelago. The Eastern province, while not so fertile, produces large crops of sugar cane, hemp, rice, cocoa, and cotton. The forests of the island furnish an abundance of fine building woods, among them teak. On the sea shores are numbers of shell fish, tortoise shell, lagan, sea cucumbers, etc., while near the W. coast deposits of excellent coal have recently been discovered. Bacolod is the capital of Occidental Negros and has a number of fine public and private buildings; pop. (Est.) 12,500. Dumaguete is the capital of Oriental Negros; pop. (Est.) 16,000.

**Nehemiah**, three persons of this name are mentioned in Scripture; One

who came with Zerubbabel from Babylon (Ezra ii: 2; Neh. vii: 7); another, the son of Azbuk (Neh. iii: 16); and lastly the celebrated Jewish leader, the son of Hachaliah (Neh. i: 1), and brother of Hanani (i: 2, vii: 2). In the 20th year of the reign of Artaxerxes Longimanus, King or Emperor of Persia (445 B. C.) he was cup-bearer to the monarch. Questioned as to why he looked sad, he replied that his sorrow arose from the reflection that the city (Jerusalem), the place of his ancestors' sepulchers, lay waste, with its gates burnt (Neh. ii: 3). He requested permission to rebuild the city, and was allowed temporary leave of absence to carry out the project. Carrying with him letters from the king, designed to secure coöperation from various quarters he proceeded to Jerusalem, obtained zealous assistance from his countrymen, and, notwithstanding Samaritan and other opposition, rebuilt the wall. He was appointed "Tirshatha," or governor of Judea, and remained in office about twelve years, when he was recalled to Persia. Subsequently, abuses having crept into the government of Judea, he was reappointed and returned. During his administration, he inaugurated and executed many social and religious reforms, notably the dissolution of the mixed marriages which, contrary to the Mosaic law, had taken place between the Jews and the heathen inhabitants of the land. He also enacted and enforced stringent laws for the better observance of the Sabbath. He remained at his post till about the year B. C. 405. Josephus says he lived to an advanced age, but of the place and year of his death, nothing is known.

**Neilgherry Hills**, (properly Nilgiri, that is "blue mountain"), a district and range of mountains in the province of Madras, Southern India. The district is bounded by Mysore, Coimbatore, and Malabar; area, 957 square miles. It consists of a nearly isolated plateau, with an average elevation of over 6,000 feet. There are six peaks over 8,000 feet in height, the highest being Dodobetta, 8,760 feet. The chief town is Utakamand (Ootacamund), which is a valuable sanitarium. The district produces coffee, tea, and cinchona. Pop. 95,400.

**Neith**, or **Neitha**, an Egyptian goddess who was worshiped especially as a local divinity at Sais. Had some of the characteristics of Minerva.

**Nejd**, or **Nejed** (Arabic, "elevated country"), a term sometimes used as an element in Arabic place-names, but used absolutely to signify the country in the interior of Arabia forming the Central Wahabi kingdom. A great part of its surface is sandy desert interspersed with fertile spots. The more elevated districts feed immense droves of camels and the best breeds of Arab horses. Chief town Riad, the Wahabi capital; pop. about 28,000. It is a remarkable fact that the present conditions in the powerful Wahabi kingdom are unknown to the world at large.

**Nelson**, city, port, and administrative seat of the Kootenay and Yale districts, British Columbia, Canada; on Kootenay river and lake and the Canadian Pacific and other railways; 115 miles S. of Revelstoke; is the distributing point for a large mining section; and has productive mines nearby. Pop. (1921) 5,500.

**Nelson, Edward William**, an American naturalist; born in Manchester, N. H., May 8, 1855; spent 1877-1881 in scientific research in Alaska, and returned to join the Arctic expedition of the United States revenue steamer "Corwin." In 1890 he was a member of the Death Valley expedition; in 1892-1901 engaged in scientific researches in Mexico; in 1907-12 was chief field naturalist, Department of Agriculture.

**Nelson, Henry Loomis**, an American journalist and author; born in New York city, Jan. 5, 1846; editor Boston "Post," (1885-1886); editor "Harper's Weekly" (1894-1898). Among his works are: "Our Unjust Tariff Law," and "The Money We Need." He died in 1908.

**Nelson, Horatio, Viscount**, an English naval officer; born in Burnham Thorpe, Norfolk, England, Sept. 29, 1758. At the age of 12 he entered the navy as a midshipman, and in 1773 accompanied Commodore Phipps in an expedition toward the North Pole. In 1777 he was made a lieutenant, and in 1779 raised to the rank of post-captain. He distinguish-

ed himself in an attack on Fort Juan, in the Gulf of Mexico, and on other occasions, and remained on the American station till the conclusion of peace. He afterward commanded the "Boreas" frigate, and was employed to protect the trade of the Leeward Islands. On the commencement of the war with the French Republic he was made commander of the "Agamemnon," of 64 guns (1793), with which he joined Lord Hood in the Mediterranean, and assisted at the siege of Bastia (May, 1794). At the siege of Calvi (July 10, 1794) he lost an eye. For his gallantry at the battle of Cape St. Vincent (Feb. 14, 1797) he was made rear-admiral of the blue, and appointed to the command of the inner squadron at the blockade of Cadiz. His next service was an attack on the town of Santa Cruz, in the Island of Tenerife, in which he lost his right arm. In 1798 he joined Lord St. Vincent (Admiral Jervis), who sent him to the Mediterranean to watch the progress of the armament at Toulon. Notwithstanding his vigilance, the French fleet which conveyed Bonaparte to Egypt escaped. Thither Nelson followed, and after various disappointments he discovered the enemy's fleet moored in the Bay of Aboukir, where he obtained a most complete victory, all the French ships but two being taken or destroyed (Aug. 1, 1798). This achievement was rewarded with the title of Baron Nelson of the Nile and a pension of \$10,000. His next service was the restoration of the King of Naples, which was accompanied with circumstances of revolting cruelty, generally attributed to the influence of Lady Hamilton, the wife of the English ambassador. In 1801 he was employed on the expedition to Copenhagen under Sir Hyde Parker, in which he effected the destruction of the Danish ships and batteries. On his return home he was created a viscount. When hostilities recommenced after the Peace of Amiens, Lord Nelson was appointed to command the fleet in the Mediterranean, and for nearly two years he was engaged in the blockade of Toulon. In spite of his vigilance the French fleet got out of port (March 30, 1805), and being joined by a Spanish squadron from Cadiz, sailed to the



**West Indies.** The British admiral hastily pursued them, and they returned to Europe and took shelter at Cadiz. On Oct. 19, the French, commanded by Villeneuve, and the Spaniards by Gravina ventured again from Cadiz, and on Oct. 21 they came up with the British squadron off Cape Trafalgar. An engagement took place in which the victory was obtained by the British, but their commander was wounded in the back by a musket ball, and shortly after expired. His remains were carried to England and interred in St. Paul's Cathedral.

**Nelson, Samuel,** an American jurist; born in Hebron, N. Y., Nov. 10, 1792; and graduated from Middleburg College; was admitted to the bar in 1817. In 1820 he was presidential elector; and three years later was appointed circuit judge, which post he held till 1831, when he became an associate justice of the Supreme Court of New York. In 1837 he was raised to the chief justiceship. In 1845 President Tyler appointed him to succeed Judge Smith-Thompson as an associate justice of the United States Supreme Court. In the celebrated Dred Scott case he agreed with Chief Justice Taney, holding that if Congress had power to abolish slavery, it also had equal power to establish it. In 1871 President Grant appointed him a member of the "Alabama" arbitration commission. He died in Cooperstown, N. Y., Dec. 13, 1873.

**Nelson, Thomas,** an American statesman; born in Yorktown, Va., Dec. 26, 1738. He was the son of William Nelson, president of the colonial council. Elected a member of the House of Burgesses when scarcely 21 years old, he was a member of the first convention which met in Williamsburg in August, 1774. He was a conspicuous member of the convention which met in Williamsburg, 1776, to frame a constitution for Virginia, was elected a delegate to the Continental Congress, and signed the Declaration of July 4, 1776. In 1777 he was appointed Commander-in-Chief of the forces of Virginia; and, in addition to his military duties, he was called, in June, 1781, to assume the functions of governor of the commonwealth. Being thus armed with executive and military power, he hastened with all the

militia he could muster to oppose the enemy, who were ravaging the country, and did not hesitate to coöperate, as second in command, with the Continental troops under Lafayette. In November, 1781, the success of the American cause being then no more the object of doubt, Nelson resigned his office, and passed the rest of his life in retirement. He died in Hanover co., Va., Jan. 4, 1789.

**Nelson, Wolfred,** a Canadian physician; born in Montreal, Canada, July 10, 1792; studied medicine and received his degree in 1811. In the War of 1812 he volunteered as an army surgeon. He was a leader in the rebellion of 1837, and presided over the gathering known as the "Four Counties," where armed resistance to British rule was determined on. The insurrection was unsuccessful, and Dr. Nelson was captured and sentenced to imprisonment for life in the Bermudas. Later the House of Lords declared his transportation illegal. He was liberated, and in 1838 settled in the United States. In 1842 he was permitted to return to Montreal, where he was twice elected mayor. For a number of years he was president of the Medical Board and College of Surgeons of Lower Canada. He died in Montreal, June 17, 1863.

**Nelson, Fort,** a Revolutionary fort once defending Norfolk, Va., now the site of the United States Marine Hospital.

**Nelumbium,** the typical and only genus of the order Nelumbiaceæ. The species are remarkable for the beauty of their flowers. *N. speciosum* has magnificent flowers, magenta or white. It does not now grow in Egypt, but is found in India. The rhizome, stalks, and seeds are eaten by the Hindus. A fiber derived from the stalk is used as a wick for lamps in Hindu temples, the plant being considered sacred. The North American Indians eat the rhizomes of *N. luteum*.

**Nemea,** a valley in the Peloponnese, celebrated for the Nemean Games, one of the Greek national festivals.

**Nemean Games,** in Greek antiquities, public games or festivals celebrated at Nemea, most probably triennially, in the Athenian month Boedromion (the modern August). The Argives were the judges at these

## Nemesis

games, which comprised boxing and athletic contests, as well as chariot-races; and the conquerors were crowned with olive.

**Nemesis**, in Greek mythology, one of the infernal deities, daughter of Nox. She was the goddess of vengeance, always prepared to punish impiety, and at the same time, liberally to reward the good and virtuous. Nemesis was particularly worshiped at Rhamnus, in Attica, where she had a celebrated statue, 10 cubits long, carved in Parian marble by Phidias.



NELUMBIUM LUTEUM.

**Neon**, a recently discovered primary element existing in air. It was discovered by Ramsay and Collie, of England, who, in July, 1898, separated it from argon while experimenting with liquid air. Neon is a gas having a density of 14.67, and like argon, it is characterized by inertness.

**Neophyte**, a term applied in the primitive Church to the newly baptized. A special use of the word was to denote one who, not having passed through the inferior grades, was, in view of I Tim. iii: 6, considered canonically unfit to be consecrated bishop.

## Nepotism

**Nepa**, water-scorpion. It is about an inch long, elliptical, yellowish-gray, with red on the abdomen. It preys on aquatic insects, and its bite is painful to man.

**Nepal**, an independent kingdom of India, on the S. slope of the Himalayas; bounded on the N. by Tibet, on the S. and W. by Bengal, and on the E. by Sikkim; lon.  $80^{\circ} 6'$ — $88^{\circ} 14'$  E.; length 500 miles; breadth about 150 miles; area about 54,000 square miles; pop. estimated 5,600,000. The N. parts of the State embrace the main range of the Himalayas with its offset spurs, on which stand the great peaks of Everest, Diwalagiri, etc. On the S. of the State lie the Terai. The intervening territory consists of mountain ridges, embracing several valleys drained by the Kurnali, Gandak, Kosi, and other rivers. The climate of course varies greatly according to the altitude; the principal valley has a climate like that of Southern Europe. The soil is very fertile, in some districts producing three crops in the year. The hillsides are terraced and the land is irrigated. The valleys are inhabited by numerous different hill tribes, partly aboriginal, partly of Mongolian or Chinese descent; but the dominant race are the Gurkhas, whose ancestors came to the Himalayan slopes from Rajputana in the 12th century, though it was not till 1769 that they made themselves masters of Nepal. The sovereign in 1917 was Tribhubana Bir Bikram, born June 30, 1906, succeeded his father, Dec. 11, 1911. The real ruler was Maharaja Sir Chandra Jung, appointed June 26, 1901. He was also a Major-General in the British army. Capital, Katmandu; pop. about 50,000.

**Nepenthe**, a magic potion, calculated to banish the remembrance of grief and enliven the spirits, and supposed to be opium. The first mention of it is in the "Odyssey" of Homer. Of modern poets, Milton and Pope are the principal who have alluded to it. The word is now used figuratively to express any remedy which gives rest and consolation to an afflicted mind.

**Nepotism** (Italian *nepote*, "a nephew") a word used to signify the system or custom practised by several Popes subsequent to Innocent VIII. of granting high honors, dignities, offices,

pensions, and the like to their family relations, generally their nephews, altogether irrespective of merit.

**Neptune**, in Roman mythology, the fabled god of the sea; the son of Saturn and Rhea, and the brother of Jupiter and Pluto. He is generally identified with the Greek Poseidon, and is variously represented; sometimes with a trident in his right hand, a dolphin in his left, and with one of his feet resting on part of a ship; at others in a chariot drawn by sea-horses, with a triton on each side. He was said to preside over horses and the manger.

In astronomy, a planet, the second most remote of any yet discovered. Irregularities having been remarked in the movements of the planet Uranus, not to be accounted for by the attraction of any known heavenly body two astronomers, M. Leverrier in France, and Mr. Adams in England, correctly reasoning that the perturbations must proceed from a yet undiscovered planet, independently calculated the probable place in the sky which such a planet would occupy. On Sept. 20, 1846, Leverrier's calculations were communicated to Dr. Galle of Berlin, who promptly looked on the heavens, discovering the planet afterward named Neptune within a single degree of its calculated position. The diameter of Neptune is nearly 35,000 miles. Its density is only a fifth that of the earth, its mean distance from the sun 2,792,000,000 miles, and its year 165 times as long as one of ours. Mr. Lassell discovered that it has one satellite.

**Nereis**, sea-centipede. The species are numerous and widely distributed.

**Nero, Lucius Domitius**, called after his adoption Claudius Drusus, Roman emperor; born in Antium, Italy, Dec. 15, 37 A. D. He was the son of Cneius Domitius Ahenobarbus, and of Agrippina, daughter of Germanicus. He had the philosopher Seneca for his teacher; was adopted by Claudius, A. D. 50, and four years after succeeded him on the throne. At the commencement of his reign his conduct excited great hopes in the Romans; he appeared just, liberal, affable and polished; but this was a mask which soon fell off. He caused his mother to be assassinated, and vindicated the un-

natural act to the Senate on the ground that Agrippina had plotted against him. He divorced his wife, and led a most shameless and abandoned life. In 64 Rome was burnt, and popular suspicion pointed to Nero as the author of the conflagration. He charged the Christians with it, and commenced a dreadful persecution of them. His cruelties, extravagance, and debauchery at length aroused the public resentment. Piso formed a conspiracy against the tyrant, but it was discovered and defeated. That of Galba, however, proved more successful, and Nero being abandoned by his flatterers, put an end to his existence near Rome, June 9, 68 A. D.

**Nerva, Marcus Cocceius**, a Roman emperor; born in 32 A. D. He twice held the honor of consulship before his election to the dignity of emperor, and was elected by the Senate after the murder of Domitian, Sept. 18, A. D., 96. He displayed great wisdom and moderation, and rectified the administration of justice and diminished the taxes; but finding himself, on account of his advanced age, not vigorous enough to repress the insolence of the Praetorian Guards, he adopted M. Ulpius Trajanus, then at the head of the army of Germany, who succeeded him on his death, Jan. 27, 98.

**Nerve, or Nervous System.** A nerve is one of the fibers which proceed from the brain and spinal cord, or from the central ganglia of lower animals, and ramify through all parts of the body, and whose function is to convey impulses resulting in sensation, motion, secretion, etc. The aggregate of these nerves, and the centers from which they proceed, forms the nervous system, the medium through which every act or detail of animal life is inaugurated and directed.

The Invertebrata possess no such specialization of the nervous centers as is seen in vertebrates, in which the brain and spinal cord are inclosed within their bony case and canal, and thus shut off from the general cavity of the body. The great and distinctive feature between the nervous system of Vertebrata and that of the lower forms consists in the absence of a defined or chief nervous center, through which consciousness may intervene to render the being intelligent.



# SCENES IN MODERN PALESTINE



1—The town of Bethlehem.  
Photo by Brown Bros.

2—City of Damascus.

3—Sea of Galilee.  
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# NETHERLANDS AND BELGIUM

SCALE OF MILES  
0 10 20 30 40 50

Railroads, ———  
Canals, ———  
Size of type indicates  
relative importance of places.

## NETHERLANDS

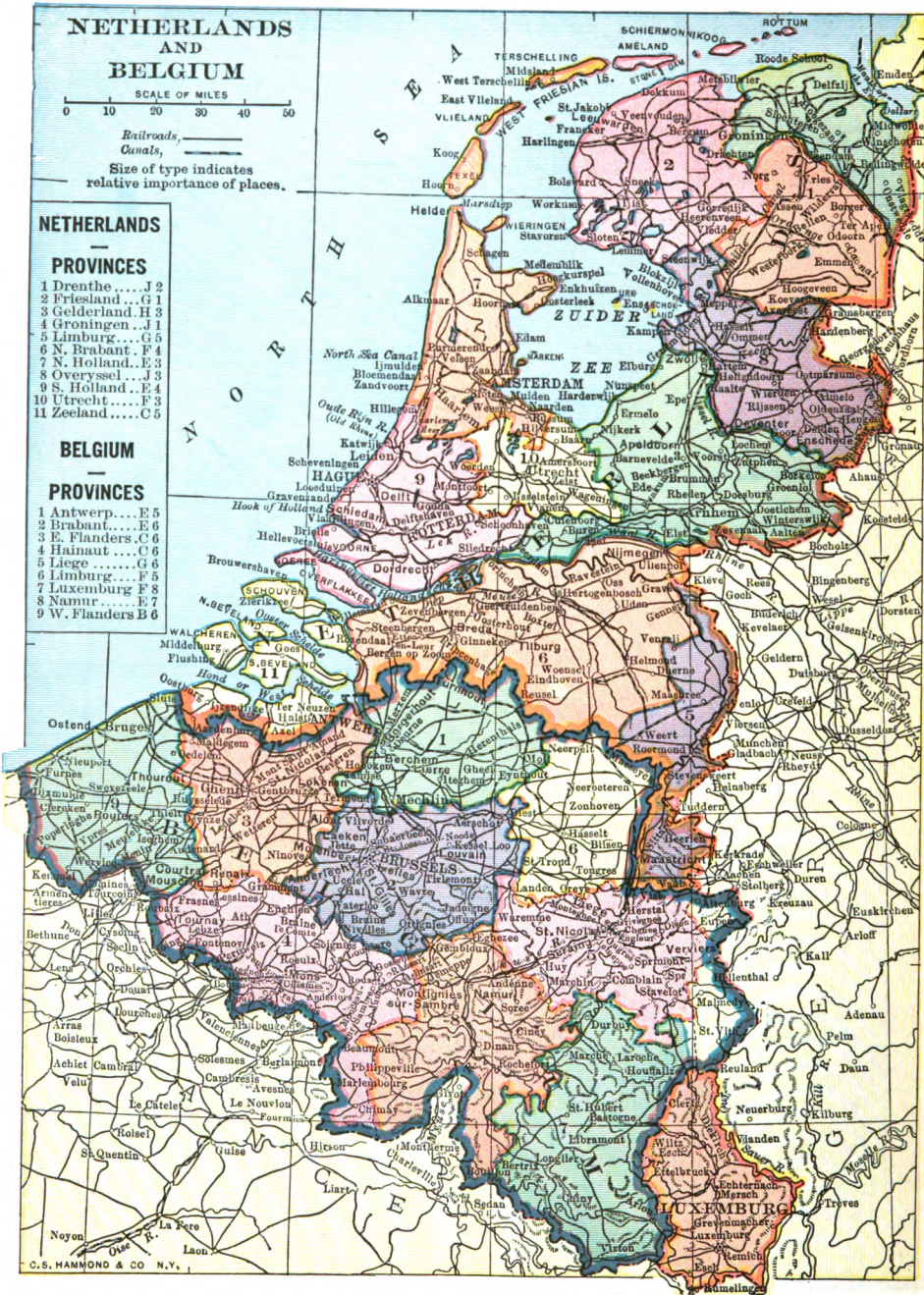
### PROVINCES

- 1 Drenthe ..... J 2
- 2 Friesland ..... G 1
- 3 Gelderland ..... H 3
- 4 Groningen ..... J 1
- 5 Limburg ..... F 5
- 6 N. Brabant ..... F 4
- 7 N. Holland ..... E 3
- 8 Overijssel ..... J 3
- 9 S. Holland ..... E 4
- 10 Utrecht ..... F 3
- 11 Zeeland ..... C 5

## BELGIUM

### PROVINCES

- 1 Antwerp ..... E 5
- 2 Brabant ..... E 6
- 3 E. Flanders ..... C 6
- 4 Hainaut ..... C 6
- 5 Liege ..... G 6
- 6 Limburg ..... F 5
- 7 Luxembourg ..... F 8
- 8 Namur ..... E 7
- 9 W. Flanders ..... E 6





and aware of the nature of the acts it performs.

**Nervous Diseases**, diseases due either to actual changes in the structure of nerve-fibers or nerve-centers, or to some irregularity of nerve function without actual structural change. Thus nervous diseases may be due to inflammation or degeneration of nerve substance; to the pressure on some part of the nervous system of tumors, effused blood, or other fluid; to the death of some part by the cutting off of its blood supply, etc.; or may be the result of lowered nervous action as a part of general bad health.

**Nesselrode, Carl Robert, Count von**, a Russian statesman; born in Lisbon, Portugal, Dec. 14, 1780. He took part in the Congress of Vienna, and in the dismemberment of Poland. At that Congress Nesselrode shared with Metternich and Talleyrand the chief direction of affairs. He was the chief contriver of the "Holy Alliance," which made Russia virtually supreme in Europe, and Nesselrode supreme in Russia. The count took a leading part at the congresses of Aix-la-Chapelle in 1818, and of Verona in 1822. After the accession of Alexander II., Count Nesselrode retired from his office of chancellor of the Russian empire, and died in St. Petersburg, Russia, March 23, 1862.

**Nestor**, in Greek legend, son of Neleus and Chloris. His father and 11 brothers were killed by Hercules; but the conqueror spared Nestor's life and placed him on the throne of Pylos. As king of Pylos and Messenia, he led his subjects to the Trojan war, where he distinguished himself among the rest of the Grecian chiefs by eloquence, wisdom, and justice. After the Trojan war he retired to Greece, where he enjoyed the peace and respect due to his old age and his surpassing prudence of mind. The ancients declare that he lived three generations of man.

**Nestorianism**, the doctrine taught by Nestorius, that there were two persons as well as two natures in Jesus Christ, and that the Virgin Mary was in no sense Theotokos, or Mother of God, as she was the mother of the man Jesus and not of the Word. This doctrine was condemned by the Coun-

cil of Ephesus, convened by Pope Celestine I., in A. D. 431. Nestorius was deposed, and the use of the Nicene Creed made obligatory. Nestorianism made rapid strides in the East, and Cardinal Newman says that in the 11th century "its numbers, with those of the Monophysites are said to have surpassed those of the Greek and Latin Churches together." Since 1553 a portion of the Nestorians have been in communion with Rome, and are known as Chaldeans. Blunt was of the opinion that Nestorius did not hold the doctrine of a dual nature, but that his chief offense in the eyes of the orthodox was opposition to the growing devotion to the Virgin Mary.

**Nestorius**, Bishop of Constantinople (428-431). He incurred the charge of heresy. Cyril of Alexandria, at the Council of Ephesus in 431, procured the condemnation of the doctrine taught by Nestorius and the deposition of the patriarch. He was banished to the deserts of Egypt, where he suffered much and died in 440. Numerous extracts from several of his works, entire epistles, and some sermons are extant. His followers, called Nestorians, were persecuted by several Greek emperors in succession.

**Netherlands, The, or Holland** (Dutch Nederland, or Koninkrijk der Nederlanden), a kingdom of Europe on the North Sea, N. of Belgium and W. of part of Northern Germany; area 12,582 square miles; pop. (1923) 7,086,913. The country is divided into 11 provinces: North Brabant, Gelderland, South Holland, North Holland, Zeeland, Utrecht, Friesland, Overijssel, Groningen, Drenthe, and Limburg. In addition to her European territories Holland possesses extensive colonies and dependencies in the Asiatic archipelago and America; including Java, Sumatra, great part of Borneo, Celebes, part of New Guinea, Surinam or Dutch Guiana, the West Indian islands of Curacao, Saba, St. Eustatius, etc.; estimated area, about 783,000 square miles; pop. approximately 35,000,000.

The Netherlands (or Low Countries, as the name implies) form the most characteristic portion of the great plain of N. and W. Europe. It is the lowest part of this immense level, some portions of it being 16 to

## Netherlands

20 feet below the surface of the sea, and nearly all parts too low for natural drainage. The coast line is very irregular, being marked by the great inlet of the Zuider Zee, as well as by various others, and fringed by numerous islands. In great part the coast is so low that were it not for massive sea-dykes large areas would be inundated and lost to the inhabitants. In the interior also dykes are a common feature, being built to protect portions of land from the lakes or rivers, or to enable swampy pieces of land to be reclaimed by draining, the water being commonly pumped up by windmills. These inclosed lands are called "polders," and by the formation of the polders the available area of the country is being constantly increased, lakes and marshes being converted into fertile fields, and considerable areas being even rescued from the sea. One of these reclamations was the Lake of Haarlem, the drainage of which, yielding more than 40,000 acres of good land now inhabited by about 12,000 persons, begun in 1839, was finished in 1852. Almost the only heights are the sand hills, about 100 to 180 feet high, along the coast and a similar chain of low hills, S. E. of the Zuider Zee. In the same line with the sandhills, extending past the mouth of the Zuider Zee, runs a chain of islands, namely, Texel, Vlieland, Schelling, Ameland, etc., which seem to indicate the original line of the coast before the ocean broke in on the low lands. The coast of Friesland, opposite to these islands, depends for its security altogether on artificial embankments. The highest elevation, 656 feet, is in the extreme S. E. The general aspect of the country is flat, tame, and uninteresting, and about a fifth of the whole surface consists of marsh, sand, heath, or other unproductive land.

Wheat, of excellent quality, is grown only in favored portions of the south provinces. Rye, oats, and buckwheat, with horse-beans, beet, madder, and chicory, are more common crops; and tobacco is cultivated in the provinces of Gelderland, South Holland, and Utrecht; flax in North Brabant, South and North Holland, Friesland, and Zeeland; and hemp, sugar-beet, oilseeds, and hops in various

## Netherlands

parts of the kingdom. Culinary vegetables are cultivated on a large scale, not merely for the sake of supplying the internal demand, but also for the exportation of the seeds, which form an important article of Dutch commerce. But it is in stock (cattle, horses, sheep, swine, goats), and dairy produce in particular, that the rural industry of the Netherlands shows its strength.

The commerce of the country was at one time the most important in the world, and is even yet of great importance and activity. In 1924 the imports aggregated in value \$2,548,913; exports, \$1,899,711. The industrial occupations are varied. Shipbuilding and subsidiary trades are among the chief. Of textile manufactures that of linen is the most important; but silks and velvets, as well as woollens and cottons, are produced in considerable quantity. Pigments, brandy, gin, paper, glass, earthenware, etc., are among the more important products. Large numbers of the seaboard population are employed in the deep-sea fisheries. Railways in 1926 had a length of 2,255 miles, and canals about 2,000 miles, roads about 3,000 miles. The chief money unit is the florin or guilder = about 40 cents.

The stock to which the people belong is the Teutonic, the great majority of the inhabitants being descendants of the old Batavians. They comprise over 70 per cent. of the population, and are chiefly settled in the provinces of North and South Holland, Zeeland, Utrecht, and Gelderland. The Flemings of North Brabant and Limburg, and the Frisians, inhabiting Friesland, Groningen, Drenthe, and Overijssel, form the other groups. The majority of the people belong to the Dutch Reformed Church (a Presbyterian Body); the remainder being Roman Catholics, Old Catholics, Jews, etc. All religious bodies are on a perfect equality. The government is a constitutional monarchy, the executive being vested (1917) in the queen, and the legislative authority in the States-General, in two chambers. The upper chamber, 50 in number, is elected by the provincial councils or assemblies of the 11 provinces; the lower chamber, 100 in membership, is elected directly, the electors

being all males of 25 years of age taxed at a certain figure. The members of the two houses are paid. Elementary schools are everywhere established, and are partly supported by the State, but education is not compulsory. Higher class schools are in all the chief towns; while there are State universities, namely, at Leyden, Utrecht, and Groningen, and the municipal university at Amsterdam. The commercial capital of the country is Amsterdam, but the seat of government and residence of the sovereign is The Hague.

At the beginning of the World War the Netherlands Government declared a strict neutrality, but as the conflict continued the Government became greatly embarrassed by unforeseen conditions, and took measures to preserve its national integrity. In outside capitals it was openly charged that shipments of various commodities made directly to Dutch ports found their way secretly into Germany, and when, as a check to such operations, the United States in 1917 placed an embargo on the shipment of certain articles even to neutral countries, the Netherlands Government protested, alleging that the act would cause great suffering throughout the country, if not general starvation. The government, it was believed, was forced to permit shipments to Germany through fear of a disastrous penalty, and, in the summer of 1917, it was openly stated that Germany had demanded a heavy loan under a threat of cutting off the supply of coal, which was becoming seriously low.

**Nethersole, Olga**, an Anglo American actress; born in Kensington, England, Jan. 18, 1870. She made her first professional appearance at the Theater Royal, Brighton, in "Harvest," in March, 1887. About a year later she appeared in London at the Royal Adelphi Theater, which was succeeded by an engagement at the Garrick. She subsequently went to Australia and returned to London at the head of her own company in "The Transgressor." She visited the United States four times, first in 1894, under the management of A. M. Palmer, appearing at Wallack's Theater in "Camille," and arousing great enthusiasm.

**Neuendorff, Adolph Heinrich Anton Magnus**, an American musician; born in Hamburg, Germany, June 13, 1843, was educated in the public schools of New York city, and while attending school also studied music. When only 15 he appeared in public as a pianist, and a year later was engaged to lead a chorus, and also play in an orchestra. In 1864 he became musical director at the German Theater in Milwaukee, Wis. The following year he succeeded Carl Anshutz as conductor of German grand opera in New York; in 1872 founded the Germania Theater; and succeeded Theodore Thomas as leader of the New York Philharmonic Society in 1878. Afterward he conducted several orchestras, and produced some original operas, among them "The Rat Charmer of Hamelin," etc. He died in New York city, Dec. 4, 1897.

**Neufchateau**, a town of E. France, at the junction of the Meuse and Mouson rivers, 49 miles N. W. of Epinal, 62 miles from the Alsatian border. It is reputed to occupy the site of the Roman Neomagus. In the Middle Ages it belonged to the Dukes of Lorraine, and in 1641 it passed to France. It is principally engaged in wool spinning and the manufacture of embroidery, nails, and chains. Pop. about 5,000.

**Neumann, John Nepomucene**, a German-American Roman Catholic prelate; born in Prachatitz, Bohemia, March 28, 1811. In 1825 he entered the Budweis gymnasium, and in 1831 the theological seminary, where he took minor orders. In 1835 he came to the United States; was ordained priest in 1836; became a Redemptionist, and was made superior of that order in Pittsburg, Pa. In 1852 he became Bishop of Pennsylvania. In 1854 he visited Europe, where he received special marks of honor. He died in Philadelphia, Pa., June 5, 1860.

**Neuralgia**, severe pain produced by irritation of a nerve, or by sympathetic action with inflammation of surrounding parts; a disease chiefly of debility, overwork, and general depression. When it occurs in the head it is called tic-doloreux, in the breast angina pectoris, and in the chest-wall, intercostal neuralgia. Bromide of potassium, strychnine, arsenic, quinine,

and tonic treatment generally are indicated in this disease.

**Neuropurpuric Fever**, a malignant epidemic fever attended with lesions of the brain and spinal cord, usually with purpuric or other eruptions; mortality from 25 to 80 per cent. of those attacked. Tanner prefers to call it cerebro-spinal fever, and gives as synonyms malignant purpuric fever, malignant purple fever, epidemic cerebro-spinal meningitis, cerebro-spinal typhus, and spotted fever.

**Neurosis**, a name common to diseases of the nervous system unaccompanied by any discoverable alteration in structure, that is to say functional diseases of the nervous system. Hysteria, for example, is a neurosis; catalepsy, some forms of mental disease, such as melancholia, various forms of neuralgia and spasm, are called neuroses.

**Neurotic**, a term introduced into medicine to indicate some relationship to the nervous system. Thus a neurotic disease is a nervous disease. Medicines that affect the nervous system, as opium, strychnine, etc., are called neurotics.

**Neuter**, in botany, a flower having neither stamens nor pistils. In grammar, a noun of neuter gender. In entomology, a sterile female, a worker. Neuters are found in social insect communities, such as those of bees and ants. They have no sex, and, consequently, no reproductive power.

**Neutral Ground**, the name given to the space between the Spanish lines and the fort of Gibraltar.

**Neutrality**, in chemistry, possession of the neutral condition.

In international law, that condition or attitude of a country or state in which it does not take part, directly or indirectly, in a war between other countries. A neutral state is allowed to supply to either of the belligerents any supplies or stores which are not contraband of war. It may also enter into treaties or engagements with either side, provided such treaties or engagements are unconnected with the subject of the war. Armed neutrality, the state of a country or nation which holds itself armed in readiness to resist any aggression of either of the belligerents to whom it is neutral.

**Neuville, Jean Guillaume, Baron Hyde de**, a French statesman; born in the castle of Neuville, near Charite-sur-Loire, France, Jan. 24, 1776. He was educated at the College Cardinal Lemoine in Paris; affiliated with the exiled Bourbon princes; and became one of their most trusted agents. In 1799, under the name of Paul Xavier, he had an interview with Bonaparte with a view to the restoration of Louis XVIII. Later his estates were confiscated, but in 1806 Napoleon agreed to refund them if he would live in the United States. He settled near New Brunswick, N. J., where his house was open to all French exiles. In 1814 he returned to France, and was received with favor by Louis XVIII.; in 1815 he was elected to the Chamber of Deputies, and in 1816 was appointed minister and consul general to the United States. Louis made him a baron and gave him the grand cross of the Legion of Honor. In 1823 as minister to Portugal he rescued the old King John VI., who had been imprisoned by his son. He was made Count of Pembosta; was secretary of the navy; and again elected to the Chamber of Deputies. He published "Notes on the Commerce of France with the United States." He died in Paris, France, May 28, 1847.

**Nevada**, a State in the Western Division of the North American Union; bounded by Oregon, Idaho, Utah, Arizona, and California; admitted to the Union, Oct. 31, 1864; number of counties, 19; capital, Carson City; area, 110,690 square miles; population (1930) 90,981.

It is a table-land 4,000 to 8,000 feet above sea-level. The State is crossed by a series of parallel mountain ranges with a general N. and S. direction. The principal chains are the Virginia Mountains, the Truckee Mountains, Antelope, East Humboldt, Toyabe and Santa Rosa Mountains. Between these mountains are deep valleys; the Colorado valley having numerous abrupt ranges, and peaks rising above its plateaus.

Nevada is rich in minerals, though, excepting silver and gold, they have been worked but little. The Comstock silver lode, discovered in 1859, was for years the most valuable in the world.

In 1925 it was estimated that the total value of all farm property in Nevada was \$98,086,358. In 1929 the State produced 56,000 bu. corn, 404,000 bu. wheat, 363,000 bu. barley and 850,000 bu. potatoes. On Jan. 1, 1930, there were in Nevada 38,000 horses, 4,000 mules, 20,000 milch cows, 290,000 other cattle, 1,088,000 sheep and 23,000 swine.

The mineral output is chiefly gold and silver, but copper (138,990,000 lbs. in 1929) and lead (13,256 short tons in 1929), zinc, pyrites, iron, quicksilver, tungsten, borax, and gypsum are also mined.

In 1929 the output of gold was 158,000 fine ounces and silver 4,530,000 fine ounces, representing a value of \$2,419,000. The value of the total mineral output for 1928 was \$34,846,000.

The manufacturing industry is not of great importance. There are 116 manufacturing plants in the State employing 2,419 wage earners, paying \$3,915,000 for wages and \$14,440,000 for raw materials and yielding a combined output of \$26,816,000.

In 1928 there were 17,479 pupils enrolled in public elementary and secondary schools under 821 teachers. For higher education there were 25 public high schools with 206 teachers and 2,628 pupils. The State University is located at Reno and is attended by 1,002 students under 70 professors and instructors.

In 1925 there were 85 religious organizations, with 15,000 members and the church property was valued at over a million dollars. The strongest denominations were the Roman Catholic, the Protestant Episcopal, and the Latter-Day Saints in the order stated.

There were, in 1929, 10 National Banks in Nevada with resources of \$231,000,000; there were also various State banks and Trust companies with savings deposits of \$23,700,000.

In 1928 it was estimated that there were over two-thousand one hundred miles of steam and approximately five miles of electric railroad, the former representing two of the great systems.

In 1927 the State reported receipts of \$3,990,105; expenditures of \$3,758,587 and a net debt of \$1,650,376. The assessed valuation of all property was \$203,070,872 and the per capita tax levy, \$15.88.

The governor is elected for a term of four years and receives a salary of \$7,000 per annum. Legislative sessions are biennial and limited to 60 days. The Legislature in 1926 had 22 members in the Senate and 53 members in the House, salary of each, \$600 per term. There is one Representative in Congress.

Nevada is part of the territory acquired by the United States from Mexico, by the treaty of Guadalupe Hidalgo. The first immigrants were the Mormons, who located in the Carson and Washoe valleys in 1848. The discovery of gold in California in the following year brought more settlers and the discovery of silver still added to Nevada's growth. It was organized as a Territory March 2, 1861, and admitted to the Union in 1864. In 1866 its area was increased to the present size by parts of Arizona and Utah.

**Nevada, Emma**, stage name of Emma Wixom, an American opera singer; born in Austin, Nev., in 1862. She studied in Paris and made her first appearance as an opera singer in London in 1880.

**Nevin, William Channing**, an American journalist; born in New Athens, O., Jan. 1, 1844. He was admitted to the bar in 1871; and wrote for Philadelphia journals. His works include: "History of All Religions," and "A Layman's Theology."

**Nevis**, an island of the West Indies, belonging to Great Britain; one of the Leeward Islands, 2 miles S. E. of St. Christopher, with which it has been since 1882 administratively connected. It is circular in form, rises in the center to a wooded ancient crater, and has an area of 50 square miles. Pop. (1921) 13,000.

**New Albany**, city and capital of Floyd county, Ind.; on the Ohio river and the Baltimore & Ohio and other railroads; opposite Louisville, Ky., with which it is connected by several bridges; is an important commercial and manufacturing city; the seat of the De Pauw Female College; and has a National cemetery in its vicinity. Pop. (1930) 25,819.

**New Amsterdam**, the name conferred on the present city of New York by the original Dutch settlers.



**Newark**, a city, port of entry, and county-seat of Essex co., N. J.; on the Passaic river, and the Pennsylvania, the Central of New Jersey, the Lackawanna, and the Erie railroads; 9 miles W. of New York city; area, 25 square miles; pop. (1920) 414,524; (1930) 442,337.

Newark is noted for the variety of its manufactures. In 1925 the capital invested in manufacturing was estimated as 540,698,201; plants using power and employing over 10 persons, 1,668; wage-earners, 66,854; annual wages and salaries, \$89,640,079; value of raw material used in processes, \$251,927,056; and combined value of products, \$490,046,599. There were 189 distinct lines of industry. In 1917 a great terminal port was created on the river, much of which was taken over by the Federal Government for an extensive ship-building plant.

Newark was settled in 1666 by families from Milford and New Haven, Conn., followed in 1667 by others from Guilford and Branford, Conn., led by the Reverend Abraham Pierson. The settlement which was named after Pierson's English home, was rigorously religious, and only members of the Congregational Church held the privilege of franchise. In 1773 Newark received its first charter; in 1777 it was taken, plundered, and nearly destroyed by the British. It was chartered as a city in 1836.

**Newark**, city and capital of Licking county, O.; on the Licking river and the Baltimore & Ohio and other railroads; 33 miles N. E. of Columbus; has large railroad repair shops; manufactures iron bridge-work, engines, farming implements, wire cloth, and bent-wood furniture; and has many relics of the mound builders in the vicinity. Pop. (1930) 30,596.

**New Bedford**, city and port of entry, Bristol county, Mass., 55 miles S. of Boston on the Acushnet estuary, where it opens into Buzzard's Bay. It was formerly the center of the American whale-fishery. It has cotton-factories, iron and copper works, oil and candle works. Pop. (1920) 121,217; (1930) 112,597.

**Newberry, John Strong**, an American geologist; born in Windsor, Conn., Dec. 22, 1822. He was geolo-

gist to the government expedition that explored the country between San Francisco and the Columbia river; also accompanied Lieutenant Ives in his exploration of the Colorado river; and the expedition under Captain Macomb in its exploration from the Santa Fe to the junction of the Grand and Green rivers. In the Civil War he was attached to the United States Sanitary Commission. He was Professor of Geology at the Columbia School of Mines, from 1866 till his death, Dec. 7, 1892.

**Newborn**, the name of a sect of Antinomians, which had a short existence in the United States in the early part of the 18th century. Its founder was a German immigrant, named Mathias Bowman (who died 1727).

**New Britain**, a city in Hartford county, Conn.; on the New York, New Haven & Hartford railroad; 9 miles S. W. of Hartford; contains a Roman Catholic cathedral, the State Normal School, and New Britain Institute; manufactures hardware, cutlery, jewelry, and knit goods; and was the birthplace of Elihu Burritt, the "learned blacksmith." Pop. (1930) 68,128.

**New Britain, Neu Pommern, or New Pomerania**, the largest of a group of islands in the Pacific Ocean; occupied by Germany; is 300 miles long, and has an area of 12,000 square miles.

**New Brunswick**, a province of the Dominion of Canada, on the E. coast of North America; bounded W. by the State of Maine; N. W. by the province of Quebec; N. by Chaleur Bay; E. by the Gulf of St. Lawrence and Northumberland Strait, the latter separating it from Prince Edward Island; and S. by the Bay of Fundy and part of Nova Scotia; area, 28,200 square miles; pop. (1930 Est.) 419,000.

The coast line is interrupted only at the point of junction with Nova Scotia, where an isthmus of not more than 14 miles in breadth connects the two territories, and separates Northumberland Strait from the Bay of Fundy, which it is proposed to unite by means of a canal. The general surface of the country is level, but hilly in the N. W. The principal rivers are the St. John, 450 miles in length, and

navigable for vessels of 100 tons to Fredericton, 90 miles from its entrance into the Bay of Fundy; and the Miramichi, 225 miles in length, which falls into the bay of the same name, and is navigable for large vessels 25 miles from the gulf. There are a number of lakes, the largest, Grand Lake, being 25 miles long by about 5 miles broad. Coal is plentiful, and iron ore abundant; the former is said to extend over 10,000 square miles or above one-third of the whole area. The climate, like that of other portions of Canada, is subject to extremes of heat and cold, but is, on the whole, healthy. After agriculture, lumbering and fishing are the main occupations of the inhabitants, though many are engaged in mining and manufacturing. A very large portion of the soil is adapted for agriculture, but only a small part is developed. Cereals are largely grown and the fruit industry is important. Fredericton is the political capital, and St. John's the commercial center.

**New Brunswick**, a city, capital of Middlesex Co., N. J., on the Raritan, which here becomes navigable, 29 miles S. W. of New York. The Dutch Reformed Church has here Rutgers College and a theological seminary; other institutions are the State Agricultural and Mechanical College with model farms; the Sage Library; and a public library. There are manufactures of india-rubber goods, machinery, etc. Was chartered as a city in 1784. Pop. (1930) 34,555.

**Newburg**, a city in Orange Co., N. Y., occupying a commanding position on the west bank of the Hudson River, 60 miles N. of New York city. It has a large river trade, especially in coal and timber. Here are the theological seminary of the Associate Reformed Church and the Hasbrouck House, Washington's headquarters in 1782-1783. Pop. (1930) 31,275.

**Newburyport**, city and port of Essex Co., Mass., about 3 miles above the mouth of the Merrimac. Contains the University of Modern Languages, cotton-mills, shoe-factories and ship-building yards. Pop. (1930) 15,084.

**New Caledonia**. See CALEDONIA.

**Newcastle**, city and capital of Lawrence county, Pa.; on the Shenango river and the Pennsylvania and other railroads; 49 miles N. of

Pittsburgh; is in a coal and limestone region; has a large trade in dairy products; and is chiefly engaged in manufacturing, having blast furnaces, rolling mills, flour and paper mills, and glass, tin-plate, nail and dynamite plants. Pop. (1930) 43,674.

**Newcastle-upon-Tyne**, a city in Northumberland Co., England, on the Tyne, 54 miles E. of Carlisle. It is built on an acclivity extending along the river on the site of an old Roman camp. The chief manufactures are glass, pottery, chemicals, iron, tin, and other metal goods. Ship building is carried on largely. Its importance is mainly owing to the coal trade from the mines along both banks of the Tyne. The expression, "Carrying coals to Newcastle," alludes to this city. Pop. (1926) 284,700.

**Newchang**. See NIU-CHWANG.

**Newcomb, Simon**, an American astronomer; born in Wallace, N. S., March 12, 1835; was educated by his father; came to the United States in 1853; taught in Maryland for two years; Studied at the Lawrence Scientific School in Cambridge, graduating in 1858. In 1861 he was appointed Professor of Mathematics in the United States navy and assigned to the United States Naval Observatory in Washington. While there he negotiated the contract for the 26-inch telescope authorized by Congress, and supervised its construction. He was connected with the "American Ephemeris and Nautical Almanac"; associated with the equipment of the Lick observatory in California; was secretary of the commission appointed by the United States government to observe the transit of Venus, 1874; was Prof. of Astronomy at Johns Hopkins Univ. 1884-93; and devoted to independent science and literature. Died July 11, 1909.

**Newcomen, Thomas**, an English inventor; born in Dartmouth, England, in 1663. In 1705, with Cawley, a Dartmouth glazier, and Savary, the manager of a Cornish mine, he obtained a patent for what is now known as the atmospheric steam engine. Some six years later his invention was brought into use for pumping water out of mines. The mechanism employed by Newcomen was so different from that previously used that he may be considered the inventor of the first real

steam engine. Died in London, in 1729.

**Newell, Robert Henry** ("Orpheus C. Kerr"), an American humorist; born in New York city in 1836. He died in August, 1901.

**Newell, William Augustus**, an American physician; born in Franklin, O., Sept. 5, 1817; was graduated at the Medical Department of the University of Pennsylvania in 1839; began practice in New Jersey; was a member of Congress in 1847-1851 and 1865-1867, and introduced into Congress the bill under which the United States Life Saving Service was founded, in 1848. Through his efforts the United States Agricultural Bureau was established and the Mount Vernon estate purchased. He was governor of New Jersey in 1857-1859; superintendent of the United States Life Saving Service in 1860-1864; governor of Washington Territory in 1880-1884; and surgeon in the Washington State Soldiers' and Sailors' Home in 1894-1898. He died in Allentown, N. J., Aug. 8, 1901.

**New England**, a collective name given to the six Eastern States of the United States of America, Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut, embracing an area of 66,400 square miles.

**Newfoundland**, an island and British colony of North America; in the Atlantic Ocean at the mouth of the Gulf of St. Lawrence. The island is 317 miles in length, 316 in breadth, and about 1,000 in circumference; area, 42,734 square miles; pop. (1920) 263,383, capital, St. Johns.

About a third of the area of the island is occupied by lakes and ponds. The coast provides a large number of excellent and sheltered harbors. The plains abound with herds of the caribou deer; these with bears, wolves, foxes, and beaver, form the principal fauna of the island, which is a favorite resort for sportsmen. In winter the cold is severe. Much of the soil is unproductive; grain and root crops are the most important agricultural products; large areas are adapted to stock raising. The chief resources of the inhabitants have been in the past the cod, seal, and salmon fisheries, these industries being the most extensive of the kind in the world. The

fisheries are of two classes, those of the shore and those at the "banks." The latter term comprises a tract about 600 miles long by 200 miles broad (see Cod). The mines are rapidly overtaking the fisheries in importance. Lead, silver, gold, copper, coal, and iron are found, Newfoundland producing a large proportion of the world's copper.

Newfoundland was discovered by John Cabot in 1497. In 1583, Sir Humphrey Gilbert took possession in the name of England and in 1621 Calvert made a settlement in the peninsula of Avalon. Representation was granted in 1832. Newfoundland forms, with the department of Labrador, a representative colony. It is administered by a governor, assisted by an executive council, and a House of Assembly of 36 members.

Soon after the discovery of Newfoundland, French fishermen frequented the "banks" in larger numbers than the English, and Great Britain did not take formal possession till 1583. The first permanent settlement was made in 1623. Before the treaty of Utrecht (1713), which ceded the island to Great Britain, the French and English had frequent conflicts over the right of possession. The French claimed the exclusive right to fish from Cape John on the E. coast, around the N. coast, to Cape Ray on the W. Great Britain never admitted this claim, and the French contention long prevented the development of the N. coast. In 1904, these differences were adjusted by treaty.

**Newfoundland Dog**, a well-known variety; according to Youatt it is simply a large spaniel. It is supposed to have come originally from Newfoundland, where it is employed by the natives as a beast of burden. It is the largest, the most courageous, and by far the most intelligent of the waterdogs, and has considerable webs between the toes.

**New France**, Canada, thus named, formerly, having been first colonized by Frenchmen.

**Newgate**, a formerly celebrated London prison, standing at the W. extremity of Newgate street, opposite the Old Bailey. The exterior presented high dark stone walls, without windows. It was long the chief criminal

prison of city and county. The earliest prison here was in the portal of the "new gate" of the city as early as 1218; hence the name. The last edifice was erected in 1780. After the passing of the Prisons Bill in 1877, Newgate was gradually abandoned.

The demolition of Newgate prison was commenced in 1903, and the excavations and laying bare of the foundations, exposed many interesting archaeological features. Beneath the prison yard a section of the wall which the Romans built around London was disclosed.



NEWFOUNDLAND DOG.

Fifteen feet high and eight broad, the wall was formed chiefly of Kentish rubble and Sussex gritstone and was in a good state of preservation, but it had to be removed to make way for the new sessions house now occupying the site.

**New Glasgow**, a town of Pictou Co., Nova Scotia, Canada, on the East River, 8 miles S. E. of Pictou Landing on Northumberland Strait, with which it is connected by a branch line of the Nova Scotia Railway. It is in a coal and iron-mining district and has several factories. Its pop. in 1921 was 8,959.

**New Granada**, the original name of Colombia (q. v.).

**New Guinea**, or **Papua**, a large island in Australasia, next to Australia the largest on the globe; area, 234,768 square miles; length about 1,500 miles, breadth from 200 to 400.

The coasts are for the most part lofty, with mountains coming close to the sea, but in the neighborhood of Torres Strait the shore presents the appearance of a marshy flat covered with dense forests. In the interior there are still loftier mountains, covered with perpetual snow, and volcanoes. In the S. E. end Mount Owen Stanley rises to the height of 13,205 feet; farther W. and near the N. coast Mount Schopenhauer reaches 20,000 feet. The island is rich in tropical products, possesses a copious and peculiar flora and fauna (birds of paradise being especially numerous and gorgeous), and is suitable for tropical agriculture. The coast is miasmatic in many places; the mountainous interior is reported healthier. On the W. coast there are numerous Malay settlements, but the bulk of the inhabitants are Papuans.

The discovery of New Guinea was made by the Portuguese early in the 16th century, but little was known of it till recently. The naturalists were the first to make incursions into its interior, and among these A. R. Wallace, who visited it in 1858, was the pioneer. The missionaries came next. Germany and the Australian colonies also began to take an interest in New Guinea, and the latter urged the home government to annex the E. part of the island, the W. portion having long been recognized as Dutch. At length the delimitation and division of the island between Great Britain, Germany and Holland was settled in 1885. That part of the island lying W. of the 141st meridian was assigned to Holland, and comprises 151,789 square miles; the remainder, the N. part of the island was assigned to Germany, and the S. to Great Britain. The former German territory, Kaiser Wilhelm's Land, contains about 70,000

square miles, the English territory, 90,540 square miles. The population of the Dutch portion is estimated at 200,000; former German, 531,000; of the British, 250,000.

**Newhall, Charles Stedman**, an American author; born in Boston, Mass., Oct. 4, 1842. He became a clergyman, filled a college professorship and became superintendent of Forest Reserves of Northern and Central California.

**New Hampshire**, a State in the North Atlantic Division of the North American Union; one of the original 13 States; capital, Concord; area, 9,341 sq. m.; pop. (1920) 443,228; (1930) 463,746.

The surface of the State is rugged. The Appalachian range of mountains enters the State from Maine, and as the White Mountains crosses the State diagonally with a maximum elevation in Mount Washington of 6,285 feet. Along the W. part of the State these mountains dwindle down to a range of hills. The White Mountain district is divided by the Saco and Lower Ammonoosuc river valleys, and the "Notch" into the White and Franconia ranges. This region presents magnificent scenery and is known as the "Switzerland of America." Besides Mount Washington, there are 28 other peaks, over 4,000 feet high. The river system is divided into five drainage basins. The Connecticut river, forming the entire Vermont boundary line, with its tributaries drains the entire W. part of the State. The Androscoggin river, rising in Lake Umbagog, drains the N. E., and the E. mountain district is drained by the Saco. The Piscataqua, with its tributaries forms a S. E. basin. The mouth of this river forms the harbor of Portsmouth, the only harbor on the New Hampshire coast. The Merrimac river formed by the junction of the Pemigewasset and Winnipiseogee flows through a region of manufacturing cities to which it supplies unlimited water power.

Agriculture leads as the main industry with manufacturing not far behind. While the State has always been noted for its granite quarries, there is comparatively little mining done. Mineral waters and scythe stones are also produced.

Pros 5

The soil for the main part is light and sandy but the Connecticut Valley and portions of Coos county are exceptionally fertile. In 1925 there were 1,441,000 acres of land cultivated, representing 21,065 farms, or an average of 107.4 acres to each farm. The total value for all of the farm property for 1925 was \$107,084,055.

In 1929 there were produced in this state 679,000 tons of hay, 1,826,000 bu. of potatoes and 974,000 bu. of apples.

On Jan. 1, 1930, it was estimated that there were 23,000 horses, 77,000 milch cows, 120,000 other cattle, 19,000 swine, and 20,000 sheep.

The abundant water power produced by the Merrimac River makes Central and Southern New Hampshire one of the most important manufacturing centers in the country.

In 1927 it was estimated that there were 1,028 manufacturing plants employing 65,482 wage earners, paying \$72,803,000 for wages, \$182,406,000 for raw materials and yielding a combined product valued at \$327,528,000. The most valuable products were boots and shoes, including cut stock and findings.

On June 30, 1929, there were 56 National Banks in the State with resources totaling \$878,000,000. There were also forty-two mutual State banks with savings deposits amounting to \$194,638,000 and other State banks and Trust companies with savings deposits totaling \$236,600,000.

In 1928 there were 99,460 pupils enrolled in public, private and parochial elementary and secondary schools with 3,001 teachers in the first named. For higher education there were 131 public and private high schools and academies with 21,450 pupils enrolled under 1,197 teachers; 3 universities, colleges and professional schools, of which Dartmouth is best known, with 4,184 students under 365 professors and instructors.

In 1925 it was reported that there were around 800 religious organizations with over 250,000 members. The approximate value of all the church property was around twelve million dollars. The strongest denominations were the Roman Catholic and Congregational, Baptist and Methodist bodies in the order named.



## New Hampshire

In 1928 there were 1,169 miles of steam and 125 miles of electric railroads in operation, the former representing three of the great steam railroad systems.

For the year ending June 30, 1927, the State reported a balance of \$943,027 in its treasury and a bonded debt of \$476,273. In 1926 the total value of all taxable property was \$620,524,512.

The governor is elected for a term of two years and receives a salary of \$5,000 per annum. Legislative sessions are biennial, and unlimited as to length. The Legislature in 1928 had 24 members in the Senate and 442 in the House; salary of each, \$200 per annum. There were 2 Representatives in Congress.

New Hampshire was settled in 1629, by an English colonist named Mason, under a grant made in 1623. In 1641 New Hampshire became a portion of the Colony of Massachusetts; who maintained her authority there till 1679, when the case being brought before the highest court of appeal in England on colonial matters, it was decided that the claim of Massachusetts was illegal, and New Hampshire was constituted a separate province. In 1686, the charter of Massachusetts having been annulled, New Hampshire, Maine, Massachusetts, and Narragansett were united in one royal province, under President Dudley, and afterward under Governor Andros. In 1689, upon the news of the English Revolution, the government of Andros was overthrown, and Massachusetts resumed her old charter. In 1692, the province of New Hampshire was re-established by the English government. In 1776, the province issued a public declaration of independence, and organized a temporary government. After taking a distinguished part in the War of the Revolution New Hampshire, in convention (1788), gave in her adhesion to the United States Constitution by a majority of 11 votes in an assembly numbering 103; and in 1807, the seat of government was permanently established at Concord. On July 1, 1869, the State ratified the 15th amendment to the National Constitution.

**New Haven**, a city and county-seat of New Haven co., Conn.; at the head

## New Ireland

of New Haven Bay, 4 miles from Long Island Sound, 36 miles E. of Hartford; the largest and most important city in the State.

New Haven has an area of 12½ square miles, 200 miles of streets, of which 106 miles are paved; a system of waterworks, with 165 miles of mains; and a sewer system covering 95 miles. The streets are lighted by gas and electricity. There is a public school enrollment of over 27,800 pupils and the annual expenditure for public education is about \$800,000. The annual cost of maintaining the city government averages \$2,500,000. New Haven is the seat of Yale University, and of the Hopkins Grammar School (the oldest preparatory institution in the United States).

New Haven has extensive and flourishing manufacturing interests.

New Haven was settled in 1638 by a company from London, under the Rev. John Davenport and Theophilus Easton. It formed a separate colony till, in 1662, it was united to the Connecticut colony. On July 5, 1779, it was captured and plundered by the British under General Tryon. After the Revolutionary War commerce increased rapidly, but was greatly crippled by the Embargo Act and the War of 1812. New Haven received its city charter in 1784, and for a time prior to 1873 was one of the State capitals. Pop. (1925 Est.) 168,500.

**New Hebrides**, a group of islands in the Pacific Ocean, W. of the Fiji islands, area, est. at 5,100 square miles. The largest ones are Mallicollo, and Espiritu Santo. One, Tanna, has an active volcano; and in consequence probably of volcanic action, Aurora, one of the most fertile, sank out of sight in 1871. They are wooded and hilly, ebony and sandalwood being obtained; and their chief products are yams, bananas, coconuts and sweet potatoes. The chief animal is a small pig, not larger when full-grown than a rabbit. The native inhabitants, belonging to the Papuan race, are in general degraded and very ferocious. These islands are under the control of a mixed commission of French and British naval officers. Pop. 70,000.

**New Ireland**, now Neu-Mecklenburg, a long narrow island in the Pacific Ocean, N. E. of New Guinea;

area, 4,900 square miles; length 300 miles; width, 15 miles. The hills rise to 6,500 feet, and they and the whole of the interior are richly wooded.

**New Jersey**, a State in the North Atlantic Division of the North American Union; one of the original 13 States; capital, Trenton; area, 8,224 sq. m.; pop. (1920) 3,187,767; (1930) 4,028,027.

New Jersey is divided into two distinct geographical divisions, the N. portion being undulating and hilly, and the S., a low sandy plain. The N. half of the State is crossed by three parallel mountain ranges running in a S. W. direction. A ridge of trap extends along the New Jersey shore of the Hudson river, known as the Palisades, and is world renowned for its scenic beauty. The Navesink Highlands, a group of sandy hills S. of Sandy Hook, and other detached hills to the S. W. rise to a height of nearly 400 feet. The entire S. portion of the State is an undulating plain gradually decreasing in altitude toward the Atlantic Ocean and Delaware river. The W. portion of the State is bounded and drained by the Delaware river. The Hudson flows along the E. boundary for 30 miles but receives no drainage.

For its size New Jersey is one of the richest mineral producing States in the Union. Copper ores are worked in Somerset county, and the Schuylar mine at Arlington was the first copper mine worked in the United States. The zinc mines in Sussex county are among the richest in the world. Lead, plumbago, manganese and nickel are also found. Sand for glassmaking, shell marls for fertilizers, lime for mortar and for fertilizing, porcelain, potter's and kaolin clays are among the more useful resources. The famous Jersey sandstone is largely used for building purposes, and the gneiss-granite, limestone, blue-stone, slate and tray are all of great commercial value. In 1925 it was estimated that there were 29,671 farms in this state having a total of 1,924,545 acres, 1,126,051 acres of which were crop land. The total value of all farm property was estimated at \$311,084,284.

In 1929 there were 183,000 acres devoted to raising corn, yielding a crop

of 6,588,000 bu. and valued at \$6,654,000. There were also produced 9,651,000 bu. potatoes and 388,000 short tons of hay, the latter valued at \$7,002,000.

In 1929 this State reported 49,000 horses, 125,000 milch cows, 167,000 other cattle, 51,000 swine, and 6,000 sheep. There are valuable fisheries yielding trout, perch, black bass, etc. Shad, menhaden, sturgeon and other sea fish are found in the Delaware River and Bay and along the New Jersey Coast. The chief clay product was sanitary ware in the production of which New Jersey stands pre-eminent. The manufactures of New Jersey are very extensive and varied. Newark is one of the principal general manufacturing centers of the country. Its production of jewelry, leather, and hats is greater than in any other city in the Union. Jersey City has extensive abattoirs, stockyard, grain elevators, steel works, and sugar refineries. Paterson is noted for its silk mills and locomotive works; Trenton for its potteries; Bridgeton, Millville, Salem and Glassboro for their glass work; Bayonne for its oil refineries and boiler works; and Elizabeth for the shipyards, sewing machines, and machine shops. In 1927 it was reported that there were 8,312 manufacturing plants, employing 408,093 wage earners, paying \$570,309,000 for wages, \$1,956,597,000 for raw materials and yielding products having a combined value of \$1,460,853,000.

The 300 National Banks (1929) had resources amounting to \$10,623,000,000. There were 27 mutual savings banks with deposits totaling \$200,325,000 and State banks and Trust companies with deposits of \$1,301,800,000.

In 1928 it was estimated that there were 887,395 pupils in public, private, and parochial elementary and secondary schools with 23,877 teachers in the first named. For higher education there were 265 public and private high schools and academies with 129,515 pupils and 5,762 teachers; 15 universities, colleges and professional schools with 10,333 students and 787 professors and instructors. Chief among the former are Princeton, Rutgers, Seton Hall College and Stevens Institute of Technology.

The strongest religious denominations in the State were the Roman Catholic, Methodist, Presbyterian, Baptist, and Protestant Episcopal in the order stated.

In 1928 there were 2,295 miles of steam and 1,093 miles of electric railroad in operation, the former representing eight of the great systems. There were also 74 miles of canals.

In 1927 the State Treasury reported a balance of \$10,620,184, and the State debt was \$67,117,000. The assessed value of all personal property was estimated at \$686,068,035, and the value of real property at \$3,924,162,173.

The governor is elected for a term of three years and receives a salary of \$10,000 per annum. Legislature meets annually and is not limited as to length of session. The legislature in 1917 had 21 members in the Senate and 60 in the House; salary of each, \$500 per annum. There were 12 representatives in Congress; State government and legislature Republican.

The first settlement in New Jersey was made by the Dutch at Bergen Point about 1615. Many Swedes and Danes afterward settled there but the Dutch maintained possession till 1664, when it became English property and was given to the Duke of York. He divided his grant of New Jersey between Lord Berkeley and Sir George Carteret, who named it New Jersey after the Island of Jersey where he had previously been governor. In 1682 East Jersey came under the jurisdiction of William Penn, and his partners in the Commonwealth of Pennsylvania. In 1738 on the petition of the colony to have a separate administration, Lewis Morris was made governor of New Jersey, and until the beginning of the Revolutionary War the growth of the colony was peaceful. The province adopted a State constitution in 1776, and throughout the Revolutionary War it was frequently the scene of stirring events. On its soil were fought the battles of Trenton, Princeton, Red Bank, and Monmouth. The first legislature was convened at Princeton in August, 1776, and the Federal Constitution was adopted by a unanimous vote, Dec. 18, 1787. The State capital was located at Trenton in 1790.

**New Jerusalem, Church of the**, a religious sect founded in London, England, in 1783, on the teachings of Emmanuel Swedenborg. One of its churches was founded in Baltimore, Md., in 1792.

**New London**, city of Connecticut, on the Thames River, 51 miles E. of New Haven; a summer resort with valuable fisheries. Pop.(1930) 29,640.

**Newman, John Henry**; born in London, England, Feb. 21, 1801; was ordained in 1824. He was one of the most active in commencing and carrying on the so-called Oxford movement—the great object of which was to counteract as well the Romanizing as the dissenting tendencies of the time, by restoring and bringing into notice what Newman and his friends believed to be the catholic character of the English Church. In October, 1845, he was admitted into the Roman Catholic Church. Soon afterward he went to Rome, where he was admitted to orders, and in 1848, on his return to England, he established a branch of the Congregation of the Oratory of St. Philip Neri, of which he was himself appointed the superior. In 1852 he was appointed rector of the Catholic University established in Dublin; and in 1879 he was made a cardinal by Pope Leo XIII. Several of his hymns are well-known, particularly "Lead Kindly Light." He died, Aug. 11, 1890.

**Newman, John Philip**, an American clergyman; born in New York city, Sept. 1, 1826. He was ordained a minister in the Methodist Episcopal Church in 1860, and elected bishop in 1888. He was a preacher of note in Washington, and long chaplain to the Senate. In 1873 he was sent to Asia as inspector of consulates. Died 1899.

**Newmarket**, a market-town, lying on the border of Suffolk and Cambridgeshire, England, 14 miles E. N. E. of Cambridge and 69 N. N. E. of London. Twice almost destroyed by fire, in 1683 and 1700, it chiefly consists of one long street. The town owes its prosperity to its horseraces, as old at least as 1605; nearly half the male population are jockeys, trainers, or stablemen. The race ground on Newmarket Heath, is one of the finest in the world. Pop. (1925 Est.) 11,600.

**New Mexico**, a State, in the Western Division of the North American Union; organized as a Territory, Dec. 13, 1850; capital, Santa Fe; area, 122,634 sq. m.; pop. (1920) 362,053; (1925) Est.) 379,074.

The Territory is a lofty plateau, crossed by mountain ranges, being the foundation of the Rocky and Sierra Madre Mountains. The Sierra Madre range passes through a series of low and often detached ranges to join the Sierra Madre range in Mexico. The Rocky Mountains, in the E. of the Territory, are the highest and often reach an elevation of 13,000 feet. The W. part is characterized by isolated peaks, lofty plateaus and deep canyons. The Llano Estacado is a broad nearly barren plateau in the S. E. The Rio Grande valley descends from an elevation of 6,000 feet near the Colorado border to 3,000 feet in the S. The Rio Grande traverses the State in a N. and S. direction and forms the principal drainage system. The Rio Pecos runs nearly parallel to it on the E. and finally joins it in Texas. Other important rivers are the Rio Chama, Rio Puerco, San Juan, Little Colorado, and Gila, the first two flowing into the Rio Grande, and the others being tributaries to the Colorado.

The mineral productions are quite extensive. Gold, silver, copper, lead, anthracite and bituminous coal, and precious stones abound. The value of the entire mineral output in 1928 was estimated at \$30,247,000. There were 35,000 ounces of gold produced, 925,000 ounces of silver, 92,777,000 pounds of copper, 2,905,000 short tons of coal and considerable lead and zinc.

In 1925 the total value of all farm property was estimated at \$236,300,563. Crops in 1929 were: hay, \$8,541,000; cotton, \$7,434,000; wheat, \$5,495,000; dry beans, \$4,389,000; corn, \$3,720,000; grain sorghums, \$2,903,000; apples, \$1,501,000. On Jan. 1, 1930, livestock was estimated as follows: 150,000 horses, 34,000 mules, 67,000 milch cows, 1,045,000 other cattle, 73,000 swine, and 2,527,000 sheep.

In 1928 there were 94,535 pupils enrolled in public, private and parochial elementary and secondary schools with 3,187 teachers in the first named. For higher education there were 103 public and private high schools and academies

with 10,662 pupils and 544 teachers. There were 26 Indian schools maintained by the Federal Government, employing 141 teachers and having an average daily attendance of over 2,200 pupils. The three principal universities, colleges and professional schools are the University of New Mexico, New Mexico School of Mines, and the New Mexico College of Agriculture and Mechanic Arts, State College Station.

In 1925 there were around 600 religious organizations with over 100,000 members and church property valued at around one million dollars. The strongest denominations were the Roman Catholic and Methodist, Presbyterian and Baptist bodies.

In 1927 there were reported 200 manufacturing plants, employing 4,653 wage earners, paying \$5,421,000 in wages, \$10,056,000 for raw materials and yielding products having a combined value of \$20,183,000.

Banking functions, under the National Banking Act of 1913, are conducted in Federal Reserve Districts numbers 10 and 11 whose central reserve cities are Kansas City, Missouri, and Dallas, Texas, respectively. On June 30, 1929, there were 48 National Banks with resources of \$397,000,000; and State banks and Trust companies with savings and time deposits amounting to \$11,800,000.

In 1928 there were 2,964 miles of steam railroads and 11 miles of electric in operation.

For the year ending June 30, 1927, the State's treasury reported a balance of \$2,383,953, and a State debt of \$3,889,500. The assessed value of real and personal property was \$313,000,000.

The governor is elected for two years, and receives a salary of \$5,000 per annum. Legislative sessions are biennial, and limited to 60 days. The Legislature in 1917 had 24 members in the Senate and 49 in the House.

The first explorers of this region were Spaniards from Mexico, who visited it in the middle of the 16th century and found it inhabited by a superior race of Aztecs or Toltecs, who live in walled cities.

During the Mexican War the United States forces under General Stephen Kearney invaded New Mexico and

## New Orleans

captured Sante Fe, Aug. 18, 1846. By the treaty of Gaudaloupe Hidalgo, 1848, the entire Mexican possessions, now included in the United States, were ceded to the United States, and in 1850 they were organized as the Territory of New Mexico. Since then the area has been reduced by the cutting off of Arizona, and parts of Colorado and Nevada. In 1910 Congress passed an enabling act to admit New Mexico as the 48th State in 1912.

**New Orleans**, a city and port of entry of Louisiana; on both sides of the Mississippi river, 100 miles above the delta; 700 miles S. of St. Louis. It is the most important city in population and trade in the Gulf States. Area, 198 square miles; pop. (1920) 387,219; (1930) 458,762. The city contains many handsome Federal, State, charitable and society buildings. Its commerce in the year ending June 30, 1927, was, imports \$5,185,745; exports \$4,402,334. Its public school enrollment in 1927 was 64,139; the bank resources were estimated to be \$330,171,880.

There were reported, in 1925, 664 manufacturing plants, employing 22,726 wage earners, paying \$20,704,074 for wages and yielding products with a combined value of \$158,141,868. The French first occupied New Orleans under Jean de Bienville in 1718. It was made the capital of Louisiana in 1722, and was chartered as an American city in 1804. On Jan. 8, 1815, it was the scene of a world-renowned battle in which General Jackson defeated the British. In 1862 Admiral Farragut forced it to surrender and it was occupied by Union troops under General Butler, as military governor.

**New Pomerania.** See NEW BRITAIN.

**Newport**, city and capital of Campbell Co., Ky.; at junction of the Ohio and Licking rivers and on the Chesapeake & Ohio and other railroads; opposite Cincinnati and Covington, with both of which it is connected by bridges; is chiefly engaged in manufacturing. Population (1930) 29,744.

**Newport**, a city, port of entry, county seat of Newport County, and at one time one of the capitals of

## New South Wales

Rhode Island, was founded in 1632 by William Coddington and John Clark on the Island of Rhode Island, in Narragansett Bay about thirty miles southeast of Providence. Coddington and Clark had been part of the original band who settled Providence with Roger Williams, but because of a difference in religious views left the little colony and sailed down the Bay to Newport Harbor, building the first cabin about a quarter mile from the waterfront on what is today called Coddington Street.

Before and during the Revolution Newport was the social and educational center of the colonies and it was here that the great names of the day, including Washington, were entertained, probably paving the way for the reputation that Newport now has as a famous watering place.

The Harbor, one of the best on the Coast, is defended by Fort Adams, one of the strongest forts in the United States. The United States Naval War College, United States Training Station, Torpedo Station, Naval Hospital and Marine Barracks are located here. Pop. (1930) 27,612.

**Newport News**, city, port of entry, and capital of Warwick county, Va.; on Hampton Roads, the James river, and the Chesapeake & Ohio railroad; 14 miles N. of Norfolk; has a military academy, female seminary, large ship-building yards, dry-docks, and iron-works; ships large quantities of coal; and is connected with several large European ports by regular steamship lines. Population (1930) 34,417.

**New Rochelle**, a city in Westchester county, N. Y.; on Long Island Sound and the New York, New Haven & Hartford railroad; 18 miles N. E. of New York city; founded by Huguenots in 1687; is chiefly a residential place of New York business men. Pop. (1930) 54,000.

**New South Wales**, the oldest of the colonies of Great Britain, in Australia, and since Jan. 1, 1901, a State in the Australian Commonwealth; bounded on the N. by Queensland, on the S. by Victoria, on the E. by the Pacific Ocean, and on the W. by South Australia; area, 309,460 square miles; pop. (1927) 2,361,950.



Sydney is the capital. There is no established religion. Among the religious sects the Church of England, Roman Catholics, Wesleyan Methodists, and Presbyterians hold the chief place. Primary education is compulsory. The educational system comprises lower and higher public schools, evening schools, and the University of Sydney. With it are affiliated three theological colleges, for Church of England, Presbyterian, and Roman Catholic students respectively.

New South Wales was discovered by Captain Cook in 1770, and founded as a penal settlement (at Botany Bay) in 1788. The most important events in its history since convict immigration ceased in 1840 are the establishment of representative institutions in 1843; the erection of Victoria into a separate colony in 1850; the important discovery in May, 1851, of extensive gold tracts, and the incorporation of the colony in the Australian commonwealth in 1901. The first railway, from Sydney to Paramatta, was opened in 1855. The colony celebrated its centenary in January, 1888. Est. pop. of Sydney (1926) 1,070,510.

**Newspaper**, a printed paper published at regular intervals containing intelligence of past, current, or coming events; and presenting expressions of opinion by editorial and other contributors and the business announcements of advertisers. The prototypes of the newspaper are supposed to be the journals called "Acta Diurna," which were the bulletins sent from Rome, several centuries before the Christian era, in which accounts were given of the progress of the imperial arms, etc. The Peking "Gazette," the oldest daily in the world, was first issued about A. D. 1350. The earliest English newspaper in the true sense of the word was Butter's "Weekly News," of 1622. Advertisements first appeared in English newspapers in 1652. "The Public Intelligencer" appeared in 1663, and "The London Gazette" in 1665. The first newspaper on the American side of the Atlantic, "Public Occurrences, both Foreign and Domestic," was a monthly, first issued in Boston, Mass., by Benjamin Harris, Sept. 25, 1690; in 1702 appeared "The Boston Newsletter," and in 1729 Benjamin Frank-

lin's "Pennsylvania Gazette," now "The Saturday Evening Post." See JOURNALISM.

**Newstead Abbey**, the home of Lord Byron, 10 miles N. N. W. of Nottingham, England. The poet Lord Byron, who made the half-ruinous old place his home in 1808, sold it in 1818, since which time about \$500,000 has been spent on its restoration.

**New Sweden**, the former name of the territory lying between the English colony of Virginia and the Dutch colony of New Netherlands. The Swedes founded a settlement here in 1627.

**Newton**, a city in Middlesex count., Mass.; on the Charles river and the Boston & Albany railroad; 7 miles S. W. of Boston; contains the Newton Theological Institute (Bapt.), Lasell Female Seminary, Fish School for Boys, Newton Classical School, and Neurological Hospital; and manufactures hosiery, paper, shoes, glue, dyes, ink, carriages, and cordage. Pop. (1930) 65,276.

**Newton, Henry J.**, an American inventor; born in Connecticut, in 1823; best known for his invention of the photographic dry plate process. He died in New York city, Dec. 23, 1895.

**Newton, Hubert Anson**, an American astronomer; born in Sherburne, N. Y., March 19, 1830; was graduated at Yale in 1850, and three years later became tutor of mathematics there, and in 1855 was made professor; holding the chair of mathematics till his death. Professor Newton is best known for his discoveries regarding the laws of meteoroids and comets and their connection. He was the first to suggest the introduction of the metric system into American arithmetics (1864). He died in New Haven, Conn., Aug. 30, 1896.

**Newton, Sir Isaac**, an English philosopher; born in Woolsthorpe, Lincolnshire, England, Dec. 25, 1642 (old style). In 1654 he was sent to Grantham School, and at the age of 18 removed to Trinity College, Cambridge. After going through Euclid's Elements, he proceeded to the study of Descartes' Geometry, with Oughtred's Clavis and Kepler's Optics, in all of which he made marginal notes. It was in this early course that he invented the method of fluxions. At the age

of 22 Newton took his degree of B. A., and about the same time he applied himself to the grinding of object-glasses for telescopes. Having procured a glass prism in order to investigate the phenomena of colors, the result of his observations was his theory of light and colors. It was not long after this that he made his grand discovery of the law of gravitation. On his return to the university, in 1667, he took his degree of M. A. Two years afterward he succeeded to the mathematical professorship, on which occasion he read a course of optical lectures in Latin. He had not finished them in 1691, when he was chosen fellow of the Royal Society, to which body he communicated his theory of light and colors, with an account of a new telescope invented by him, and other interesting papers. In 1704 he published his treatise on "Optics." In 1705 he received the honor of knighthood from Queen Anne. He died in Kensington, near London, March 20, 1727.

**Newton, John**, an American military engineer; born in Norfolk, Va., Aug. 24, 1823; was graduated at the United States Military Academy, second in his class. He served through the Civil War. Became Brigadier-General and chief of engineers in 1884; and was retired Aug. 27, 1886. His most famous engineering feat was the removal of obstructions in Hell Gate Channel, New York. After his retirement from the army he was commissioner of public works in New York city. He died in New York city, May 2, 1895.

**New Westminster**, city, port of entry, and former capital of British Columbia; on the Fraser river and the Canadian Pacific and other railways; 3 miles E. of Vancouver; is the see of an Anglican and a Roman Catholic bishop; contains a Government Building, Dominion Penitentiary, Provincial Asylum for the Insane, and Methodist and Roman Catholic colleges; and is chiefly engaged in the lumber and salmon industries. Pop. (1921) 17,000.

**New Year's Day**, the day on which the year commences in the Gregorian calendar; the 1st of January; usually called New Year, or New Year's.

**New York**, a State in the North Atlantic Division of the North American Union; one of the original 13 States; capital, Albany; area, 49,204 sq. mi.; pop. (1920) 10,450,718; (1930) 12,619,503.

The E. part of the State is mountainous. The Adirondack system lies in the N. E. corner, W. of Lake Champlain, and contains the only great forest remaining as a public domain within the boundaries of the State. Its highest peaks are Mount Marcy, 5,379 feet; Mount MacIntyre, 5,183 feet; and Haystack, 4,919 feet. S. of the Adirondacks lie the Catskills, noted for their scenic beauty, and as a summer resort. These mountains form the termination of a chain extending into the State from New Jersey, and are a continuation of the Blue Ridge range. Another branch enters the State at its S. boundary and terminates in the Highlands on the Hudson. These mountains range in altitude from 1,500 to 3,500 feet. A third range extends N. as far as the Mohawk, and reappearing on the N. side of the river continues toward Lake Champlain, connecting with the Adirondacks. The W. portion of the State is undulating, descending in rolling terraces to Lake Ontario. The river systems are divided into two divisions, one flowing N. to the Great Lakes, and St. Lawrence, and the other reaching the Atlantic by the Hudson. The Hudson river, the most important in the State, rises in the Adirondack Mountains and is navigable for 150 miles. The St. Lawrence forms 100 miles of the Canadian boundary. The lakes are numerous and noted for their beauty. One half of Lakes Ontario and Champlain, and the E. end of Lake Erie are property of the State. Lake George, S. of Lake Champlain, is an extensive sheet of water and is a noted resort. The central portion of the State has an extensive lake system, containing Seneca, Cayuga, Oneida, Keuka, and Canandaigua lakes. The Adirondack region is full of lakes, including Long, Scroon, Upper and Lower Saranac, Placid, and Raguette. Chautauqua, in the S. W., and Saratoga and Otsego in the E. are among the many pleasure resorts. The waterfalls in the State are numerous, and include Niagara Falls, Trenton Falls, Genesee Falls, Portage, Taghkanic, and those near

Ithaca, and in Watkins Glen. There are many large islands, Manhattan, containing the greater part of New York city, Long Island, Staten Island, Coney Island, and Fire Islands are on the S. shore, and the St. Lawrence river contains over 700 small islands belonging to the State. The entire State is noted for its scenery. The chief harbors are New York, on New York Bay; Dunkirk and Buffalo on Lake Erie; Tonawanda and Lewiston on Niagara River; Genesee, Sodus, Oswego, Sacketts Harbor, and Cape Vincent on Lake Ontario; Ogdensburg on the St. Lawrence; Rouse's Point, Plattsburg, and Whitehall, on Lake Champlain; and Sag Harbor on the E. end of Long Island.

Nearly all geological formations are found in New York. The Palæozoic constitutes four-fifths of the entire area, and the Pleistocene ice sheet covers the entire State and is responsible for many of the details of topography.

About one-half the area of the State is adapted to cultivation. The principal forest trees are the maple, oak, pine, elm, hickory, beech, birch, ash, hemlock, spruce, cedar, poplar, willow, whitewood, chestnut, basswood, butternut, sycamore, locust, ailanthus, black walnut, yew, and sumach. In 1925 there were 188,754 farms totaling 19,269,926 and comprising 63 per cent of the total land area of the State. There were 7,403,503 acres of this in woods and pastures, and 500,000 acres in orchards and vineyards. In 1929, the leading farm products, by value, were: hay, \$81,898,000; potatoes, \$36,018,000; apples, \$23,954,000; corn, \$21,655,000; wheat, \$5,685,000. New York also produces large quantities of small fruits, especially grapes.

The dairying industry leads, and is followed by vegetables. In 1926 there were 7,082,000,000 pounds of milk produced. On Jan. 1, 1930, livestock in the State was estimated as follows: horses, 374,000; mules, 6,000; milch cows, 1,383,000; other cattle, 1,991,000; swine, 232,000; sheep, 461,000. Wool production, in 1929, amounted to 2,165,000 pounds.

The chief mineral productions are pig iron, clay products, building and other stone, Portland cement, salt, petroleum, sand and gravel, gypsum, natural gas and mineral waters. In 1925 there were 1,730,254 short tons of gypsum produced valued at \$16,-219,906; 8,534,089 barrels of Portland cement valued at \$14,967,642; 14,671,-215 barrels of salt valued at \$7,133,-244; 429,248 tons of iron ore valued at \$2,074,426; mineral water 7,058,-351 valued at \$843,637 and 85,109 tons of salt valued at \$993,913.

There was granite, trap rock, sandstone, marble, limestone and lime produced valued at \$6,270,000; brick, tile, and pottery valued at \$24,811,-816, and crude petroleum, 1,695,000 barrels valued at \$6,270,000.

The river systems with their extensive water power, the proximity of the Pennsylvania oil field, and the facilities for transportation make New York one of the most prominent manufacturing States. Niagara Falls gives enormous power which is turned into electricity. Schenectady is famous for its locomotives and electrical apparatus, Ballston Spa for its paper mills, Elmira for its car shops, Oswego for flour mills, Kingston for hydraulic cement, Haverstraw for bricks, Rochester for optical goods, Syracuse for salt, and Brooklyn, New York city, Buffalo, Utica, Albany, Troy, Binghamton, and Yonkers, for general manufactures. In 1927 there were 36,650 manufacturing plants employing 1,072,284 wage earners, paying \$1,605,378,000 in wages, \$4,804,173,-000 for raw materials and yielding products having a combined value of \$9,400,061,000.

The imports for the fiscal year ending June 30, 1928, totaled 15,284,747 cargo tons and the exports 10,866,540 tons. There is a railroad terminal on the New Jersey side and lighters and barges carry loaded cars across the river.

In 1928 there were 8,338 miles of steam and 4,348 miles of electric railways in the state. There were also 638 miles of canal of which 361 miles belong to the Erie canal.

In 1929 there were 559 national banks with resources totaling \$68,433,-000,000, demand deposits of \$2,735,-

216,000 and time deposits of \$1,212,257,000. There were also a number of Mutual State banks with savings deposits totaling \$4,463,046,000 and other State banks and Trust companies with deposits of \$7,183,500,000.

In 1928 there were 2,440,041 pupils in public, private and parochial elementary and secondary schools, with 34,848 teachers in the first named. For higher education there were 1,023 public and private high schools and academies with 509,854 pupils under 19,874 teachers; 62 universities, colleges and professional schools in which 133,517 students were enrolled under 8,778 professors and instructors. The latter group included the Polytechnic Institute, Brooklyn; Hamilton College, Chanton; Hobart College, Geneva; Colgate University, Hamilton; Cornell University, Ithaca; College of St. Francis Xavier, College of the City of New York, Fordham University, New York University, Teachers' College, and Columbia University, all in New York; Rochester and Syracuse Universities; the Rensselaer Polytechnic Institute, Troy, and the Clarkson College of Technology, Potsdam. The United States Military Academy is at West Point. The colleges for women exclusively were Barnard, New York; Elmira, Elmira; Vassar, Poughkeepsie; and Wells, Aurora. The total expenditure for education was \$257,672,042 for the year ending June 30, 1926.

The State Treasury reported a balance on hand June 30, 1927, of \$51,609,355, and the funded debt for the year was \$341,059,000. The assessed value of all property was \$22,958,837,107.

Comprehensive and vast as the system of public school education is, it by no means represents all that is done by the State and its various communities for popular instruction. New York has worked out, to an extent that no other commonwealth has ever approached, a system of adult education. This education, in the full elaboration of the system, reaches out to the individual in his home, and shares, especially with farmers, some of the puzzling problems of their daily toil. It entertains and instructs hundreds of thousands of people in New York city

with an elaborate system of lectures. It presents a system of instruction in travel and geography to 50,000 teachers of the State by duplications, with an accompanying lecture, of the most beautiful lantern slides ever exhibited.

"The Free Lecture System of New York City" is what the leading system of adult education in the metropolis is called. It has been and is an attempt to apply university extension methods to the masses of a great city.

By no means second in importance to the free lecture course in New York city is the system of visual instruction supported by the State under the direction of the American Museum of Natural History. This system is based primarily on the exhibition of stereopticon views. It is essentially a course in travel, for it deals with what may be seen chiefly in travel. Its leading purpose is to benefit the teachers of the State, and it was for that reason that the State took up the work.

These lectures arose from a desire to make the American Museum of Natural History a means of direct benefit to the people. There was also the expectation of interesting the people in the museum. They have been a success from the time of their beginning in 1882. It requires much office machinery to keep the system in operation, for no less than 90 sets of slides for each lecture are made. The number of slides made, almost all of which are colored, reaches 34,000 a year. The law permits the sale of the slides at cost price, one to each State, on the sole condition that there shall be no admission fee charged when they are shown and that they shall be part of the system of "free common schools of the State."

Altogether novel is the University Extension work solely for agricultural purposes, carried on by the State through Cornell University. It may be divided into two classes, that for the farmers and their wives, and that for the school children in nature study.

The governor is elected for a term of two years, and receives a salary of \$25,000 per annum. The legislative sessions are held annually, commenc-

ing on the first Wednesday in January, and the length of the session is unlimited. The Legislature in 1927 had 51 members in the Senate and 150 in the House, each of whom receives \$2,500 per annum, and mileage. There were 43 Representatives in Congress. The State government was Democratic.

The judicial branch of New York's government consists of a court of appeals, (the highest) with a chief justice and six associates all elected for a term of 14 years, a supreme court with 107 justices elected from the nine judicial districts into which the state is divided, and lower courts consisting of county courts, city courts and surrogate courts.

New York maintains hospitals for the insane at Binghampton, Brooklyn, Gowanda, Kings Park, Buffalo, Ward's Island, Ogdensburg, Middleton, Rochester, Utica, Wingdale and Willard. At Newark, Syracuse and Rome are institutions for defectives; State Agricultural and Industrial School; at Hudson the State Training School for Girls; at Thiells is Letchworth Village, an institution for feeble minded boys and girls and at Sonyea, Craig Colony for Epileptics.

There is at Batavia a school for the blind, a hospital for tubercular patients at Raybrook and one for crippled and deformed children at West Haverstraw. Other charitable institutions under state control are the Thomas Indian School at Iroquois, the State Soldier's and Sailor's Home at Bath and the State Womans Relief Corps Home at Oxford.

State prisons are located at Ossining (Sing Sing), Auburn, Dannemora and Comstock. Reformatories are at Elmira and Bedford, the latter being for women.

The first explorations of New York were made by Champlain and Henry Hudson in 1609; Champlain coming down from Canada, as far as the lake which bears his name, and Hudson, discovering New York Bay, and sailing up the Hudson river. The region surrounding the Hudson was claimed by the Dutch, who called the place New Netherlands. The Dutch set-

tlements were invaded by the English from Connecticut, and by the Swedes in Delaware. The English claimed New Netherlands as part of Virginia, priorly discovered by Cabot, and Charles II., in 1664, granted a charter of all the lands lying between the Hudson and the Delaware to his brother, the Duke of York. In August of the same year the whole country passed into the possession of the English, who gave the name of New York to New Amsterdam, and that of Albany to Fort Orange. When the Duke of York ascended the English throne as James II., the government became an appendage to the crown, and was administered by viceroys bearing the title of governor. In 1684 Governor Dongan concluded an offensive and defensive treaty with the Indians; and from that time forward the English became their allies and fast friends. The great conflict between England and France to decide the sovereignty of America broke out in 1754. In 1756, the French destroyed Oswego; and, in the following year, Fort William Henry capitulated to the French, when the English garrison was massacred by the Indian allies of the victors. In 1758 General Abercrombie was defeated at Ticonderoga, and Colonel Bradstreet took Fort Frontenac. In 1759 Niagara surrendered to General Prideaux and Sir William Johnson, and Ticonderoga and Crown Point were abandoned, leaving no French troops within the limits of the colony. In 1775 the Revolutionary War broke out, and in February, 1776, an American force took possession of New York city, which they held till the defeat at Long Island in August. In 1786 New York city was evacuated by the British. The first constitution of the State was adopted in 1777. In 1788 New York adopted the Federal Constitution. The national government was first located in New York city, which was the State capital till 1797. During the War of 1812 important events took place on the N. boundary along Lake Ontario, the Niagara river and on Lake Champlain. Slavery was abolished in 1817. Steamboat navigation was begun on the Hudson in 1807, and in 1825 the



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Erie Canal was completed from the Lakes to the Hudson. New York took an active part in the Civil War, supplying large numbers of troops to the army.

**New York**, a city in Southern New York; coextensive with New York, Kings, Queens, and Richmond counties; on New York Bay, the Hudson and East Rivers, Long Island Sound and the Atlantic Ocean; the first city in the United States in population and commercial importance, and after London, the largest metropolitan center in the world. It is connected with all parts of the world by railroads and steamship lines; area, 326.89 square miles. In considering the rapid growth of the population it should be borne in mind that the estimates and census returns up to the constitution of the Greater New York in 1898 cover only all of Manhattan Island and a part of Westchester county, while those after 1898 cover all five burroughs. Pop. in 1656, 1,000; 1664, 1,500; 1698, 4,937; 1731, 8,622; 1756; 13,046; 1790, 33,131; 1800, 60,515; 1810, 96,373; 1820, 123,706; 1830, 202,589; 1840, 312,710; 1850, 515,547; 1860, 813,669; 1870, 942,292; 1880, 1,164,673; 1890, 1,441,216; 1900, 3,437,202; (1920) 5,620,048; (1925 Est.) 6,103,384.

In 1609 the Island of Manhattan was first visited by Hendrick Hudson, who ascended the river which bears his name. In 1613 Adrian Block, a merchant, arrived and built four houses. In 1623 a Dutch colony was established and in 1626, Peter Minuit, the governor, bought Manhattan Island from the Indians for \$24 in trinkets. This colony was known as New Amsterdam. It passed into the possession of the English in 1664 and was named New York. In 1673 the town surrendered to a Dutch squadron, but was given back a year later by treaty. In 1765 the Stamp Act Congress met in New York city, and voted a Declaration of Rights. In 1774 a cargo of tea was sent back to England and another thrown overboard, and on April 3, 1775, the colonial assembly adjourned. The city was held by the Continental militia till Aug. 26, 1776, when forced to withdraw by British who held the city till Nov. 25, 1783. During 1776 the gilded

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lead statue of George III., erected in Bowling Green in 1770, was torn down by the populace, and most of it was melted into bullets in Connecticut; a fire destroyed 493 houses; and Capt. Nathan Hale, was executed as a spy by the British on East Broadway. A statue of the hero now adorns City Hall Park. The first American post-office was opened here in 1783, and the same year Washington bade farewell to his officers at Fraunce's Tavern (now restored to its original appearance). The Continental Congress met here on Jan. 11, 1785; the City Hall, erected in 1700, was remodeled for use by the National government; and Washington was here inaugurated the first time, April 30, 1789. From Oct. 6, 1794, till July 19, 1795, the city suffered from a scourge of yellow fever, causing over 500 deaths, and from Aug. 1, till Nov. 1, 1798, there was a second similar scourge, this time causing 1,524 deaths. In 1805, the first free school was opened; in 1807 the first steamboat voyage to Albany was made, and in 1825 the Erie Canal was opened. In 1832 (June 27-Oct. 19) there was an epidemic of cholera, occasioning 4,000 deaths, and the first horse railroad in the world was opened on Fourth avenue. An anti-abolitionist riot broke out in 1834, which required the services of the State militia to suppress. Another disastrous fire broke out on the bitterly cold night of Dec. 16, 1835, destroying 693 buildings and causing a loss estimated at \$20,000,000. In 1853 the Crystal Palace Industrial Exhibition took place, and in 1863 occurred the draft riot caused by the enforcement of the military draft. The city supplied the Union army with 116,382 troops for the Civil War. The Brooklyn Bridge was opened in 1883; and the Bartholdi Statue unveiled in 1886. The celebration of the centennial of Washington's inauguration took place in 1889; and the Columbian celebration in 1892 and 1893. In 1899 occurred the celebrated naval and military parades in honor of the heroes of the Spanish War. A new charter consolidating New York, Brooklyn, Queens County, Staten Island, and the Bronx, as the City of Greater New York, went into ef-

fect Jan. 1, 1898, and was amended in 1901. The achievements of Hendrik Hudson and Robert Fulton were commemorated by an international demonstration in 1909.

The city is divided into five boroughs: Manhattan, consisting of Manhattan Island, Governors Island, Bed-

Islands; Brooklyn, consisting of the former city of Brooklyn, and all of Kings county; Queens, including the present county of that name; and Richmond, consisting of Staten Island.

The main body of the city, situated on Manhattan Island, is bounded by Spuyten Duyvil creek and the Harlem river, separating it from the mainland of the State, the East river, New York Bay, and the Hudson river.

At the S. end of Manhattan Island is the Battery, a park of 21 acres having a fine water front. Running N. from the Battery is Broadway, the principal business street. At 10th street it turns N. W., and forms part of the main road to Albany. The streets in the S. part of the city are narrow, crooks and irregularly laid out, but beginning with 13th street, they cross each other at right angles.

The public parks of New York city are very numerous and well kept. There are 79 parks in Manhattan, 48 in the Bronx, 40 in Brooklyn, and 19 in Queens. The larger parks are, Central Park, 843 acres, in Manhattan; Bronx Park, 719 acres, and Van Cortlandt Park, 1,132 acres, in the Bronx; and Prospect Park, 526 acres, in Brooklyn. The services of Hon. Andrew H. Green (q. v.), "father of Greater New York," and who had full control for thirteen years of the construction of Central Park, accounting faithfully for every penny of millions of dollars, will never be forgotten. Central Park contains about 30 buildings, including the Metropolitan Museum of Art, the American Museum of Natural History, and the old United States Arsenal; two extensive reservoirs, numerous lakes, and children's playgrounds. The Bronx Park contain a batonical garden, and a large reservation, used as a zoological garden. Van Cortlandt Park is an extensive stretch of rural country, containing a large skating pond, baseball fields, golf links, and a militia parade ground. Numerous other parks scattered about the city, include City Hall Park, containing the Postoffice and City Hall; Riverside Park, extending several miles along the Hudson river and containing the tomb of General Grant, and Morningside Park, situated on a high ridge E. of Riverside and containing the buildings of Co-



PARK ROW BUILDING.

loes Island, Ellis Island, Blackwells Island, Randalls Island, Wards Island and Oyster Island; Bronx, consisting of all the portion of the city lying N. or E. of the Harlem river, between the Hudson and the East rivers and Long Island Sound, including City, Traver's, Hart's, and Riker's

lumbia University, the new cathedral of St. John the Divine, and St. Luke's Hospital. Parkways are designed to connect Van Cortlandt Park with Bronx Park, Palham Bay Park and Crotona Park. In Brooklyn, Ocean Parkway extends from Prospect Park to Coney Island. The Speedway, a public road for fast driving, 100 feet wide, extends for a distance of two miles along the foot of the bluff on the W. bank of the Harlem river.

Among the public buildings is the City Hall, 216 by 105 feet, and three stories high; completed in 1812 at a cost of \$500,000. Near the City Hall are the new Municipal Building, Court House, Hall of Records, and City Prison, all noted for their fine architecture. New York is noted for the number and height of its office buildings. There are many such buildings in New York, ranging from twenty to eighty stories. Chief among them are the Empire State, the tallest building in the world, which stands 1,250 feet from sidewalk to summit; Bank of the Manhattan, 838 feet; the Chrysler Building, 808 feet; Woolworth Building, 792 feet; Metropolitan Life, 700 feet; Chamin Tower, 680 feet; Lincoln Building 638 feet; Sherry-Netherland Hotel, 620 feet; Mercantile Building, 617 feet; Singer Building, 612 feet; New York Life, 610 feet.

The city is considered to be the best lighted city in the world. In 1826 the city counted less than eight miles of lighted streets and possessed some 2748 lamp posts. In Greater New York today the eight miles have been extended to more than 3,100 miles, and the lamp posts have been multiplied to some 101,000. The total cost of lighting the city annually is over \$4,000,000. It is interesting to note nowever that this sum is less than 70 cents per capita.

In 1929 the assessed valuation of property was \$17,445,731,434—over three and one half per cent of the wealth of the United States. The total value of the public property owned by the city of New York is \$1,934,331,201. The bonded debt in 1929 was \$1,516,757,642.

During 1928 the total bank clearings of the United States were \$625,644,791,000 of which \$391,627,476 or over 60 per cent were in the City of New York.

Naturally in a money center of New York's size there are to be found the great exchanges of the world, notably the Stock, the Cotton and Produce, with their powerful machinery to facilitate the distribution of capital and products. Merely those securities in which members of the New York Stock Exchange are authorized to deal represent a value of \$84,691,143,439 as of March 1, 1928. Of this amount there is a market value of \$49,484,707,019 in stocks. Listed bonds are in the amount of \$36,206,436,420 market value.

The shipping engaged in foreign trade entering the port of New York in 1928 totaled 15,252,217 tons. The value of foreign commerce of the port of New York during the calendar year 1929 was \$4,055,811,000 of which \$2,152,716,000 constituted imports, exports being valued at \$1,903,095,000. The foreign commerce of this port constituted over 41 per cent of the foreign commerce of the whole United States.

A large proportion of the alien immigrants admitted into the United States come in at the port of New York. During the calendar year 1924 there were 108,980 aliens admitted. This was nearly one third or all those admitted into the United States. The landing place of the immigrants is Ellis Island, which is occupied by the Federal Government for that purpose. It is an interesting place to visit. In 1929, 158,238 immigrant and 141,290 non-immigrant aliens arrived there.

With its unusual waterfront and transportation facilities, the City of New York is an ideal place for many lines of manufacturing. Over 100 steamship lines come regularly to the port and nine great railroad systems have their terminus here. Every part of the world can be reached by rail or water. In the year 1925 it was estimated that there were 23,714 industries employing 538,845 wage earners, spending \$844,648,136 for wages and \$2,718,792,438 for raw materials, and yielding products valued at \$5,324,413,612.

The total number of miles of operating subways, elevated and street railway lines in the City of New York is 880. The total length of tracks is 1,945 miles. The total passenger fares

collected annually is close to 2,500,000,000 and the amount in dollars is \$119,000,000. In the building of the subways an arrangement in the nature of a partnership exists between the City and private companies. Under this plan the city has invested about \$250,000,000 in the subway system. The total investments held by the public in New York traffic lines aggregate about \$820,000,000. In addition to the traffic lines all operated by electric current, there are motor omnibuses.

There are five elevated lines in Brooklyn. Electric cars connect with all the suburbs and many places on Long Island, Westchester county, and Western Connecticut. There are ferry lines connecting with Brooklyn, Jersey City, Weehawken, Staten Island, Hoboken, Long Island City and other cities, and islands about the city. There are steamship lines connecting with over 140 points on the Hudson river, the Atlantic coast, Long Island Sound, and the bay. Manhattan is united with Brooklyn by the Brooklyn (cost \$22,400,000), Manhattan (\$26,000,000), and Williamsburg \$23,100,000) bridges, and with Queens by the Queensboro (\$17,250,000), bridge. The Harlem river is spanned by several bridges, of which High and Washington are the most notable. Interborough and other communications are facilitated by the Pennsylvania Railroad system of tunnels under the Hudson river, connecting the great new station on Seventh avenue with Weehawken, N. J., and also extending across the city and under the East river to Long Island City; by the Hudson & Manhattan Railroad tunnels connecting the city with Jersey City, N. J., by two sets of tubes; and by the Belmont and Rapid Transit tunnels under the East river, connecting with Long Island City and Brooklyn.

Two systems of local rapid transit by means of subways are in operation. The first, the Interboro, has a four-track trunk line extending from the City Hall to 96th street, with a two-track extension from the City Hall to the Battery, and two northern extensions from 96th street, one on Broadway to Van Cortlandt Park at 242d street, with three tracks to 137th street and two beyond, a part being

an elevated structure, and the other on Lenox avenue to the Bronx Park, with two tracks and a stretch of elevated structure.

The second system, that owned by the Brooklyn-Manhattan Transit Corporation, formerly known as the B. R. T. now operates subway lines in the City of New York. They are as follows: The Fourth Avenue Line with its branches, the Broadway Line in Manhattan, and the Queensboro Line from Manhattan into the Borough of Queens.

One of the greatest feats in modern engineering is the Holland Tunnel (named after the engineer who started its construction but died before its completion (which connects the City of New York with Jersey City. It was opened for public use on November 12, 1927. The total length of the tunnel is 9,250 feet, 5,480 feet of which are under the river. There are two roadways in the tunnel each 20 feet wide, and there is head room of 13 feet 6 inches. The estimated hourly traffic in both directions is 3,800 vehicles, or over 15,000,000 yearly. The cost of construction was around \$50,000,000. The tunnel is equipped with the most modern system of ventilation which changes the air in the tunnel 42 times per hour, supplying 3,761,000 cubic feet per minute.

In 1925 there were 1,080,836 pupils enrolled in the regular day public schools, the average daily register being 964,804. There were also considerably over 100,000 pupils enrolled in evening elementary and high schools, and there were 604 elementary and 37 high schools, and the total staff of teachers and directors numbered 28,793.

There are 644 churches in Manhattan and the Bronx, possessing property valued at \$149,262,000, and the Brooklyn churches number 579, possessing property valued at \$52,050,920. The total number of churches in the five boroughs of New York equal 1500 and the total value of the church property in the entire city is \$213,304,000.

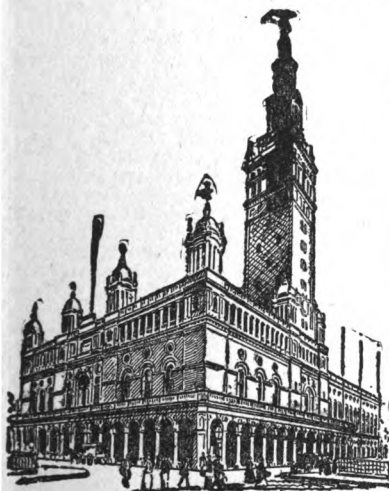
The Reformed Church is the oldest in the city, and dates from 1628. The Protestant Episcopal is next in age, and Trinity is the oldest and wealthiest parish. The Roman Catholic Church has a magnificent, double-spire

## New York

cathedral (St. Patrick's) on Fifth avenue, and the Protestant Episcopal Church on Morningside and Amsterdam avenues.

The principal institutions for higher education are Columbia University, Fordham University, New York University, College of the City of New York, College of St. Francis Xavier, Barnard College, Teachers' College, Union Theological Seminary, and numerous law, medical, dental, art, musical and other professional schools.

The libraries of the city are very extensive. The Astor, the Lenox and the Tilden Library were consolidated in 1901, under the title of New York Public Library, Astor, Lenox and Tilden Foundations, for which a grand building on Fifth avenue was completed in 1911. Other libraries of importance are the Mercantile, Society, Apprentices', Cooper Union, Free Circulating, Columbia University, New



MADISON SQUARE GARDEN.

York City, New York Historical Society, and the Brooklyn. There are law libraries in the post-office building, at the Bar Association, at the Equitable Life Insurance Company, and the New York Law Institute Library. In 1901 Mr. Andrew Carne-

## New Zealand

gie presented the city with \$5,200,000 for the purpose of erecting libraries. This gift has been used for the erection of 65 branch library buildings in various parts of the city.

**New Zealand**, a former British colony, since 1907 a Dominion, consisting of a group of islands in the S. Pacific Ocean, two large, called North and South (or Middle) Islands, and a third of comparatively insignificant size, Stewart Island; length of the group, N. to S., about 1,000 miles; area, 103,581 square miles. Pop. (1926) 1,344,384, exclusive of 63,670 Maoris. Capital, Wellington.

New Zealand is rich in minerals. Coal is abundant; iron, tin, silver, and copper are also found in various regions. Gold, discovered in 1861, is worked both in North and South Islands. The output in 1926 was valued at \$1,344,384. The climate is varied, though healthful. Rapid changes are a notable feature of the weather. Among vegetable productions the most characteristic are the ferns which form almost the only vegetation over immense districts. Some of them are more than 30 feet high, and remarkable for the elegance of their forms. The flax plant furnishes an article of export. A number of the forest trees furnish valuable timber. Among others is the kauri or damar pine. The colony produces every English grain, grass, fruit, and vegetable. In animals New Zealand is singularly deficient, only a sort of dog, a rat and two species of bats being indigenous. Rabbits have been introduced and have multiplied so as to become a perfect pest; pigs now run wild, as well as cats. Pheasants, partridges, quails, and red and fallow deer have also been successfully introduced.

The original natives of New Zealand, a people of Polynesian origin, are called Maoris. Their numbers have been so reduced by internecine feuds that they do not now exceed 50,000, all of whom, with the exception of a few hundreds, are located in the North Island. They are a stalwart race, the men having magnificent physiques and the women unusual types of Polynesian beauty.

By the constitution the crown appoints the governor; but the legislative power is vested in the General



Assembly, of two houses—a Legislative Council consisting of 37 members appointed for terms of seven years, and a House of Representatives, which is made up of 80 members, including 4 Maoris, elected for three years, women having equal suffrage. The governor is aided by a ministry comprising the chief officers of state, who are members of the General Assembly. For colonial defense military training was made obligatory without exceptions in 1909–10; the chief ports have been put in a state of defense. There is no State-aided Church, but most Christian sects are well provided for. The Church of England is most numerous represented. Elementary education is free, secular, and compulsory. Secondary education is provided for in numerous high schools, grammar schools, colleges, etc.

Stock-rearing and agriculture are the most important industries, though mining is also an important occupation. There are about 27,000,000 sheep in the colony, and by far the most important export is wool; frozen meat and grain are also largely exported. Manufacturers in 1926 employed \$295,345,005 capital and had products valued at \$423,647,170.

New Zealand was discovered by **Tasman** in 1642, but little was known of it till the visits of Cook in 1769 and 1774. The first permanent settlement was made by missionaries in 1815. In 1840 New Zealand was erected into a colony; in 1841 it was formally separated from New South Wales and placed under its own independent governor; and in 1852 it received a constitution. In 1865 the seat of government was removed from Auckland to Wellington. In 1873 the public works policy was inaugurated, and large loans were raised for immigration, harbors, railways, roads, etc. In 1876 the provinces were abolished, and the colony was divided into counties, ridings, and boroughs.

**Ney, Michael, Duke of Elchingen and Prince of Moskva**, peer and Marshal of France; born in Saarlouis, France, Jan. 10, 1769. His early years were devoted to the study of the law, but disliking the confinement, he entered the army as a private hussar in 1787. He was distinguished

in the first years of the Revolutionary War, when serving with the army of the Rhine; and in 1796 he rose to the rank of Brigadier-General. He was one of Napoleon's bravest marshals. Ney accepted command under the restored Bourbon king after Napoleon's overthrow, but when the latter returned from Elba Ney went over with his army to his former friend and master. He again fought under his banner at the battle of Waterloo. After the conclusion of that eventful day, and the second abdication of Napoleon, Ney was advised to quit France; he was arrested, and brought to trial; and his colleagues having declared themselves incompetent to form a court-martial the affair was carried to the House of Peers, by whom he was condemned. He was shot Dec. 7, 1815, in the garden of the Luxembourg, Paris.

**Nez Percés**, a tribe of American Indians, chiefly settled in Idaho, on the Lapwai river. The Nez Percés proper have always been loyal to the whites, and are making good progress in civilization; but in 1877 the treaty reductions of their reservation led to a sanguinary outbreak on the part of the "non-treaty" Nez Percés, who attacked settlers, fought the soldiers, and then fled across Idaho, Montana, and Dakota. They were overtaken and beaten, and the survivors (some 350) transferred to Indian Territory; but in 1885 some were restored to Idaho, and the rest joined the Colville Indians, in Washington.

**Niagara Falls.** The Niagara river, which flows from Lake Erie N. into Lake Ontario, is about 36 miles in length; its descent from the level of one lake to that of the other is about 334 feet. At the foot of Grand Island, which reaches within 1½ miles of the Falls, the river is contracted to a width of 2½ miles, and grows narrower as it proceeds. By this, and by the descent in the channel, which is about 60 feet in the mile, are produced the swift currents known as the rapids, in which the river, notwithstanding its great depth, is perpetually white with foam. At the Falls, which are 22 miles from Lake Erie, the river is divided by an island called Goat Island; but the largest portion of the water is sent down by the Canadian

side. On this side of the grander cataract, the Horse-shoe Fall, about 600 yards in width and 154 feet high. The water rushes over with such force that it is thrown about 50 feet from the foot of the cliff, leaving a space (as also at the middle American Fall), by which visitors can pass behind the falling water. Goat Island forms a large wall of rock between the Canadian and American Falls, the latter being again divided by Luna Island connected by a bridge with Goat Island. The American Fall is from 8 to 10 feet higher than the Horse-shoe, but only about 220 yards wide. The basin into which the waters precipitate, has a depth equal to the heights of the falls, and a few feet from the base of the cataract presents the phenomenon of a calm reservoir on which an excursion steamer approaches close to the falls, and over which rowboats, and even swimmers cross to the opposite sides. The waters escape to Lake Ontario through the celebrated gorge, 7 miles long, spanned by four bridges. Along this gorge from the Niagara Escarpment at Lewiston and Queens-town, the cataract, through ages has worn, and is still wearing, its way backward to Lake Erie. In the gorge are the Whirlpool Rapids and the vast circular whirlpool caused by a sudden bend in the channel. A trolley line descends the gorge on the American side, and skirts the Canadian heights, traversing the International Park laid out on both sides of the river and falls. Since 1895 on the American side, and 1904 on the Canadian side, power works have been operated to utilize the estimated 16,000,000 horse-power provided by the falls. See ELECTRIC TRANSMISSION OF ENERGY.

**Niagara Falls**, a city in Niagara county, N. Y.; on the Niagara river and several railroads; 23 miles N. W. of Buffalo; is the seat of Niagara University (R. C.), De Veaux College (P. E.), and the New York State Reservation (American part of the Niagara International Park); and manufacturers graphite, carborundum, aluminum, emory wheels, etc. Pop. (1920) 50,760.

**Niam-niam**, an African people dwelling along the watershed that parts the feeders of the Bahr al-Ghazal from those of the Welle-

Makua and other N. tributaries of the Kongo. They are a branch of the A-Sanden tribes, who all belong to the stock of the negroid Nubas. They are passionately fond of music, and play a kind of mandolin. Polygamy prevails. The weapons are spears, knives, a species of iron boomerang, and shields.

**Nias**, an island belonging to Holland; W. of Sumatra; has an area of about 2,100 square miles.

**Nibelungenlied**, "Song of the Nibelungen," an epic written in the middle High German dialect, of the 12th century. It contains 6,000 lines, in four-lined rhymed stanzas, divided into 39 sections. It tells the story of Siegfried, Prince of the Netherlands, and owner of the magic Nibelungen hoard, and the vengeance of his widow Kriemhild, sister of Gunther, King of Burgundy, on Gunther's wife Brunhilda, Queen of Iceland, who deluded by Siegfried's magic, causes him to be murdered by Hagen.

**Nicaragua**, a republic of Central America; reaching from the Caribbean Sea to the Pacific, between Costa Rica on the S. and Honduras on the N., the E. coast measuring 290 miles and the W. coast 185 miles; area 49,200 square miles; pop. (1920) Est. 638,119, including 40,000 uncivilized Indians.

The Central American Cordilleras form the backbone of the country; they run N. W. and S. E. at a distance of 12 to 30 miles from the Pacific, and attain elevations of 4,000 and 5,000 feet above sea-level. On the W. the surface sinks rapidly to a longitudinal depression the S. two-thirds of which are filled by the large lakes of Nicaragua and Managua, the latter lying N. of the former and 25 feet higher. This depression is studded with a chain of volcanic cones, standing on islands in the lakes and clustering thickly between the N. end of Lake Managua and the Gulf of Fonseca at the N. W. extremity of the country. Though most of these are quiescent, some of them burst forth in eruption from time to time; Ometepe poured out its lavas during seven days in 1883. Another low range separates this depression from the Pacific. The districts W. of the central backbone are the chief seats of the population. There stand the towns Managua (the capital), Leon, Granada, Chinandega, Rivas.

On the W. coast there are three harbors—the Gulf of Fonseca in the N. Salinas Bay in the S., and the port of Corinto toward the N. The only port on the E. side is Greytown, at the mouth of the San Juan river. E. of the Cordilleras the surface falls away gradually; the spurs that break off from the main ridge sink into the low alluvial plains that face the Caribbean Sea. Thick forests clothe extensive areas on this side. Several rivers carry off the surplus water E., a few being of good length. The low coast-belt, called the Mosquito Territory, is lined with salt lagoons.

The mountain-spurs E. of the main chain are rich in minerals; gold is mined in the neighborhood of Libertad on to Matagalpa, in the heart of the country, and silver near the sources of the Coco in the N.; coal, copper, tin, iron, lead, zinc, antimony, quicksilver, marble, etc., exist but are not worked.

As a rule the climate varies between 70° and 90° F., and there is a dry season lasting from about December to May.

The natural products of the soil are tropical. The forest trees include mahogany, rosewood, logwood, fustic, sandal-wood, india-rubber, and numerous others that yield fancy woods, medicinal plants, gums and dyewoods. Large herds of cattle are bred and reared on the extensive plains of the center and E. The rich soil of the cultivated W. region yields maize, coffee, cocoa, sugar, cotton, rice, tobacco, indigo, and a great variety of tropical fruits.

The state religion is the Roman Catholic, but all creeds are tolerated.

The country is governed by a president (appointed for 4 years), a legislative assembly of 40 members, and a senate of 13; both these bodies are elected by the people, the former for four, the latter for six years.

The public revenue is derived chiefly from monopolies on spirits, tobacco, and gunpowder, and from import dues. The total debt, Dec. 31, 1913, was \$5,898,100.

During the Spanish supremacy (after 1550) Nicaragua was a province of Guatemala. In 1821 it asserted its independence, and two years later joined the federation of the Central American States, a connection that

lasted 16 years. The history of the country after the severance from Spain till 1865, is a record of war and dissension. This region was given up to Nicaragua in 1860. Between 1855 and 1860 the aristocratic and the democratic party were fighting, the latter being assisted by the adventurer William Walker. Since then Nicaragua has made laudable efforts to develop her resources and to advance along the path of civilization, and she now compares most favorably with her sister republics in Central America.

A bill providing for the construction of a canal across Nicaragua connecting the Atlantic and Pacific oceans was adopted in the United States Senate Jan. 21, 1899. It provided that the canal should be completed in six years; should be capable of accommodating the largest ocean steamers; and should cost not over \$115,000,000. The bill also guaranteed the neutrality of the canal. Politically, the most important provision of the bill was the authority it gave to the President to open negotiations with Great Britain for the abrogation of the Clayton-Bulwer treaty. Under this last provision a convention was signed in Washington Feb. 5, 1900, by Secretary Hay, representing the United States, and Lord Pauncefoot, representing Great Britain, in which that provision of the Clayton-Bulwer treaty providing for a joint control of any canal across the isthmus was annulled. This convention was ratified by the United States Senate, Dec. 20, 1900, but it failed to meet the approval of the British government. A second convention, signed Nov. 18, 1901, was ratified by the United States Senate on Dec. 16. The Panama route, however, was chosen for the interoceanic canal. In 1907 Nicaragua, at war with Honduras and Salvador over boundary and other disputes, achieved notable victories.

**Nicaragua, Lake of**, an extensive sheet of water in the republic of the same name; length, 90 miles N. W. to S. E.; greatest breadth, 40 miles; mean breadth, 30 miles; 110 feet above the Pacific from which it is separated by a strip of land 12 miles wide. The San Juan de Nicaragua river flows from its S. E. extremity into the Carib-

bean Sea, and at its N. W. extremity it is connected with the smaller Lake of Managua or Leon by the Penaloza river.

**Nicene Creed**, properly the Constantinopolitan-Nicene Creed, the summary of articles of belief formulated by the first council of Nice, and the "Filioque" clause, to which the Greeks objected, having been added at the First Council of Constantinople, A. D. 381, under Pope Damasus I.

**Nicholas**, one of the seven deacons mentioned in the Acts. He was a proselyte of Antioch; but afterward founded a sect called by his name, which permitted concubinage and the offering of meats to idols. By some, however, this Nicholas is said to have been a person other than Nicholas the deacon.

**Nicholas, I.**, Emperor of Russia, third son of the Emperor Paul I.; born near St. Petersburg, Russia, June 25, 1796 (old style). He ascended the throne in 1825. He made war with Persia in 1827-1828; joined in the treaty of London, which secured the independence of Greece; and made one of the allied powers who destroyed the Turkish fleet at Navarino in 1827. This affair led to war between Russia and Turkey, in which the latter was defeated, paid indemnity, and signed the treaty of peace at Adrianople in 1829. He suppressed the Polish insurrection which broke out in the following year with relentless severity. Early in 1852 began the Russian effort to take over the holy places and assume the protectorate of the Christians in Palestine. This led to the Crimean War, before the close of which Nicholas died from lung disease in St. Petersburg, Feb. 18, 1855 (old style).

**Nicholas, I.**, King of Montenegro (proclaimed a kingdom in 1910); born Oct. 7 (Sept. 25), 1841. After an educational course at Trieste and Paris, he succeeded his uncle, who had been assassinated in August, 1860. See APPENDIX: *World War*.

**Nicholas, II.**, former Emperor of Russia, son of Alexander III.; born in Petrograd, May 18, 1868. England conferred on him the Order of the Garter in 1893. Married Princess Alix of Hesse-Darmstadt in 1894. His coronation took place in Moscow in May, 1896. He originated the Hague Peace

Conference, and was much opposed to war, but the imperial policy precipitated the Russo-Japanese War in 1904. The former Czar had four daughters and one son and heir, Alexis, born in 1904. On March 15, 1917 a revolution resulted in the abdication of the Czar and he was murdered with his whole family by the Bolshevik government July, 1918.

**Nicholas, Edward Tatnall**, an American naval officer; born in Augusta, Ga., March 1, 1823. During the Civil War he commanded the steamer "Winona," assisted at the bombardment of Forts Jackson and St. Philip, received the surrender of Fort St. Philip, April 28, 1862, participated in the attack on and passage of the Vicksburg batteries, June 28, 1862, and engaged the Confederate ram "Arkansas." Promoted rear-admiral commanding the South Atlantic station, Feb. 25, 1878. He died Oct. 12, 1886.

**Nicholas, Ernest Fox**, an American educator; born in Leavenworth, Kan., June 1, 1869; Professor of Physics at Colgate University in 1892-1898 and Dartmouth College in 1898-1903; Professor of Experimental Physics at Columbia University in 1903-09; president of Dartmouth College in 1909-16; Professor of Physics at Yale University; is a Rumford medalist of the American Academy of Arts and Sciences and a Research Associate of the Carnegie Institution.

**Nicholas, Grand Duke**. Born in 1875—died of pneumonia Jan. 6th, 1928, at Antibes, France, whither he had gone from Paris to seek a more temperate climate. His last words were said to have been a speech to his servants exhorting them to remain faithful to their true Russia.

As commander-in-chief of the Russian armies, Grand Duke Nicholas was believed to have had behind him greater popular support than that accorded to the Czar, his second cousin. After the rise of the bolsheviks, he was chosen as successor to the throne of the late Nicholas by the supreme council of Russian monarchists, who represented several million Russians living in exile.

**Nicholas, Henry E.**, an American naval officer; born in New York; en-

tered the United States Naval Academy, Oct. 1, 1861; and was promoted captain March 3, 1899. In 1897 he was given command of the "Bennington," and joined Admiral Dewey's fleet at Manila in July, 1898. On Jan. 26, 1899, he received command of the monitor "Monadnock," with which he did unusually effective work off Paranaque, Philippine Islands. During a severe bombardment, June 10, 1899, Captain Nichols was overcome by the heat and refusing to be relieved died while his vessel was shelling the insurgents.

**Nicholson, James**, an American naval officer; born in Chestertown, Md., in 1737. In 1776 he obtained the command of a ship-of-war called the "Defence," fitted out by the government of Maryland, and soon retook some vessels which the British had captured. In June, 1780, when in command of the frigate "Trumbull," of 32 guns, he fought a severe action with the "Wyatt," in which the "Trumbull" was completely disabled, but her antagonist, equally hurt, withdrew, without attempting to capture her. In 1801 he was appointed commissioner of loans for the State of New York. He died in New York city, Sept. 2, 1804.

**Nicholson, James William Augustus**, an American naval officer; born in Dedham, Mass., March 10, 1821; entered the navy in 1838 and was promoted commander in 1862. During the Civil War he was distinguished for gallant conduct and had charge of the monitor "Manhattan," which was with Farragut's fleet at the battle of Mobile Bay in 1864. He was promoted rear-admiral in 1881, and died in New York city, Oct. 28, 1887.

**Nicias**, a celebrated Grecian painter; contemporary with Apelles. His greatest picture was that which illustrated the passage in Homer's "Odyssey," where Ulysses invokes the shades of the departed. Ptolemy I., King of Egypt, offered Nicias 60 talents (about \$75,000) for the picture; but the painter preferred to present it to his native city of Athens. One of his pictures was taken to Rome by Augustus. He is said to have painted some of the statues of Praxiteles. Lived about the 3d century B. C.

**Nickel**, a tetrad-metallic element, discovered by Cronstedt in 1751, in combination with arsenic, in the copper-colored mineral arsenide of nickel; called by the miners kupfernickel. Nickel is silver-white, malleable and ductile, and as infusible as iron. It is magnetic at ordinary temperatures and dissolves in dilute sulphuric, nitric, and hydrochloric acids. Nickel forms several alloys, the most important being known as German-silver. Also, in the United States, a popular name for a small coin, consisting of nickel, value five cents.

**Nickel Plating**, the art of coating copper, brass, or other metal with nickel.

**Nickel Steel**. Iron has a strong affinity for nickel, and alloys with it in all proportions very readily. It seems, however, from tests given by H. K. Landis, of the American Institute of Mining Engineers, in the "Scientific American," Jan. 9, 1897, that the maximum results are obtained with 8 or 16 per cent. of nickel.

Commander Eaton, U. S. N., says that the United States government first bought nickel to use in steel in 1890, that the first nickel steel plate was tested in 1893, in July, from which date all armor for United States vessels was made of nickel steel.

Outside of the application of this metal by the United States navy to armor, angles, rods, thin plates, engine shafting, hull plates, an experimental gun, the barrels of small arms, torpedo netting, etc., may be mentioned its application to bicycle frames and handle bars, steam boilers, and difficult steel castings.

**Nicobar Islands**, a group of islands in the Indian Ocean, forming with the Andamans, to the S. of which group they lie, an extension of the great island chain of which Java and Sumatra are the principal links; area of Andaman and Nicobar, 3,140 square miles; pop. (Est.) 25,000. A penal colony for India exists at Nankauri on the island Kamorta.

**Nicodemus**, a member of the Jewish Sanhedrim, at first a Pharisee, and afterward a disciple of Jesus. He was early convinced that Christ came from God, but was not ready at once to rank himself among His followers.



At last, in the trying scene of the crucifixion, he avowed himself a believer, and came with Joseph of Arimathea to pay the last duties to the body of Christ, which they took down from the cross, wrapped it in spices and laid it in Joseph's sepulchre.

**Nicolas, Sir Nicholas Harris**, an English antiquary; born March 10, 1799. He entered the navy, and had reached the rank of lieutenant by 1815, but at the close of the war left the service to study law, and was called to the bar at the Inner Temple in 1825. He devoted himself chiefly to genealogical and historical studies, and his work, "History of the Orders of Knighthood of the British Empire," remains a solid monument of learning. He died near Boulogne, France, Aug. 3, 1848.

**Nicolay, John George**, an American author; born in Essingen, Bavaria, Feb. 26, 1832; was brought to the United States in 1838 by his parents, and educated in the public schools. When 16 years old he became a printer in the office of the "Free Press," Pittsfield, Ill., where he rose to the post of publisher and editor. As proprietor of this paper he was recognized as a dominant political force in the State. During the famous campaign between Mr. Lincoln and Mr. Douglas, he took sides with the former, and when Mr. Lincoln was nominated for the presidency he appointed Mr. Nicolay his private secretary. Shortly before President Lincoln's assassination, he appointed Mr. Nicolay United States Consul at Paris, which post he held till 1869. In 1872 he was made marshal of the Supreme Court of the United States, and occupied that post for 15 years. As an author, Mr. Nicolay is best known from "Abraham Lincoln, a History" (1890), on which he collaborated with John Hay. He also contributed numerous magazine articles and sketches on President Lincoln. He died in Washington, D. C., Sept. 26, 1901.

**Nicole, Francois Leon Etienne**, a Haitian poet; born near Grande Rivere, in 1731. He was a mulatto. Educated in a Jesuit college, he went to Paris in 1750, where Voltaire introduced him to literary circles. Louis XV. granted him a pension in recog-

nition of his talents. He died in Cap Francois, in 1773.

**Nicoll, William Robertson**, a Scotch clergyman and editor; born in Lumsden, Aberdeenshire, Scotland, Oct. 10, 1851. He took an M. A. at Aberdeen University; was minister of the Free Church at Kelso for eight years; on account of ill-health he resigned, in 1887 started the "British Weekly," one of the most successful religious papers in England, and later became English editor of the "Bookman."

**Nicolls, Sir Richard**, the first English governor of New York; born in Ampthill, England, in 1624. At 18 years of age he joined the royal army and was made captain of a troop of horse. On the triumph of Cromwell he fled to Holland, but at the restoration of Charles II., was appointed gentleman of the bed chamber to the Duke of York. In 1664 he was given charge of the fleet sent to reduce New Netherland. Owing to lack of preparation the Dutch could offer no resistance, and the English gained easy possession of the city, which Sir Richard renamed New York. In 1665 he established the offices of mayor, alderman, and sheriff. His rule was popular and successful. He returned to England in 1668, and lost his life serving under the Duke of York against De Ruyter, May 28, 1672.

**Nicot, Jean**, a French diplomatist; born in Nimes, France, in 1530. He was French ambassador at Lisbon. He introduced into France the tobacco plant, having obtained its seeds from a Dutchman, who obtained them from Florida; it was called after him Nicotiana. He also compiled one of the first French dictionaries (1606). He died in Paris, France, May 5, 1600.

**Nicotine**, an acrid poisonous alkaloid found in tobacco leaves to the extent of from 1 to 5 per cent.

**Niebuhr, Barthold Georg**, a German historian and philologist, son of Carstens Niebuhr; born in Copenhagen, Aug. 27, 1776. After holding situations in a government office at Copenhagen, he was invited to Berlin in 1805, and entered the service of the King of Prussia, whose confidence he long enjoyed, and who charged him with important diplomatic negotia-

tions, and made him privy-councillor. On the establishment of the University of Berlin, Niebuhr was chosen lecturer on Roman history; and the lectures then delivered formed the basis of the work by which his name is immortalized, "Roman History." Niebuhr was a great linguist and philologist, as well as historian, and published, besides his history, "Minor Historical and Philological Writings," etc. He died in Bonn, Prussia, Jan. 2, 1831.

**Niehaus, Charles Henry**, an American sculptor; born in Cincinnati, O., Jan. 24, 1855; studied art at the Royal Academy of Munich, Germany, where he won the first medal ever given to an American. He received a high award at the World's Columbian Exposition, made various celebrated statues, and was engaged on the Congressional Library, Washington; Trinity Church, New York; the appellate court house, New York; etc.; and was the sculptor of two large groups at the Pan-American Exposition in Buffalo in 1901.

**Niger, Joliba, Quorra, Kovaree, or Kwara**, a river of Central Africa, rising near the W. coast; length, estimated 2,600 miles; area of basin and that of tributaries 1,023,280 square miles. It rises in the region now known as the States of Samory, inland from Liberia and Sierra Leone. In its course it passes through much fertile valley land, while numerous towns and villages stand on its banks, and a considerable canoe commerce is prosecuted. The exploration of the Niger has been principally accomplished by English travelers, and Great Britain holds the protectorate of its border-lands as far as Timbuktu. Above this city the control is in the hands of the French, who have steamers on the upper stream, and forts on its banks. Slaves were formerly nearly the only article of export from the Niger, but palm oil is now the principal staple, the delta outlets being known as Oil rivers. The Niger is one of the greatest rivers in the world. So strong is its current that driftwood from the vast estuary is frequently carried scores of miles to sea.

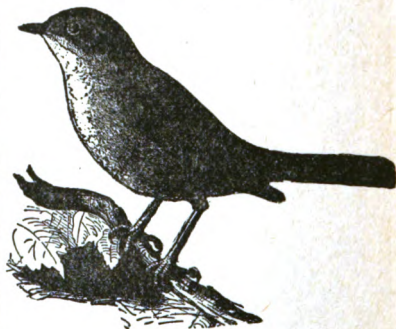
**Nigeria**, a British Colony and Protectorate in West Africa, comprising the former Protectorates of Northern

and Southern Nigeria, united on Jan. 1, 1914; seat of the central government, Lagos; area under the union, approximately 336,000 square miles; pop. (1921) about 16,500,000. Slave markets have been suppressed by native rulers, and slave-dealing is now practically ended.

**Night Hawk**, a species of goat-sucker, a bird universally known in the United States,  $9\frac{1}{2}$  inches in length and 23 in extent of wing. It is a bird of strong and vigorous flight, and its prey consists of beetles and other large insects. The other American species are the "chuck-will's widow" and the "whip-poor-will," both of which, like the night hawk, arrive in May, and leave the States in September.

**Night Heron**, cosmopolitan in its distribution, and including nine species. The common American night heron is found all over the United States, as a permanent resident in the S. portion only.

**Nightingale**, a European migratory species of birds. The famed song of the male is his love chant, and ceases when his mate has hatched her brood. The nightingale feeds chiefly on the larvæ of insects. The nest is



NIGHTINGALE.

built near the ground; the young are fledged in the month of June, and are ready to accompany the parents in their migration S. in the month of August.

**Nightingale, Florence**, an English philanthropist; born in Florence,

Italy, May 15, 1820. During the Crimean War (1854) the hospital accommodation was found to be very defective, and Miss Nightingale promptly volunteered to organize a select band of nurses at Scutari. The offer was accepted by the British War Office, and within a week Miss Nightingale was on her way to the East, where she rendered invaluable service to the sick and wounded by her incessant labors in nursing and hospital reform. She was consulted during the American Civil War and the Franco-German War. She published "Notes on Hospitals," "Notes on Nursing," "Notes on Lying-in Institutions." D. 1910.

**Night-Riders**, a term applied to the parties who in 1906-1910 carried on a bitter war against the Tobacco Trust in the tobacco-growing States of the South. Early in 1906 a number of influential planters agreed to fight the trust, first by refusing to sell their stock to it, and later by restricting the production. Many planters, however, failed to stand by the agreement, and continued to sell stock and grow crops, despite entreaties and warnings. This condition soon resulted in the organization of bands of masked horsemen, who at night visited the farms of offending planters, destroyed their growing crops, and burned all the stock they could find.

"Night-riding" soon extended over six States; developed crimes of arson, murder, and personal assaults; and led to the calling out of State militia, and the arrest, conviction, and sentence to death of a number of participants. Finally, in 1910, the National government intervened, and, on the charge of conspiracy in restraint of trade, indicted twelve Kentuckians for preventing a shipper from sending tobacco out of the State to a customer.

**Nihilism**, in ordinary language, nothingness; the state or condition of being nothing, nihility. In history, a term used to designate the Russian Socialist movement, which began about 1870. In 1878 the struggle with the government commenced. At a congress held at Lipetsk, shortly after Solovieff's attempt on the life of Alexander II., the acquisition of political freedom was declared to be the first

necessity. It was hoped to gain this by the formation of a legislative body, elected by the people, with guarantees for electoral independence, and liberty to agitate for reforms. This was demanded from Alexander III. shortly after the assassination of his predecessor as the price of cessation from violence. The Nihilist programme is an agrarian socialism based on communal property.

**Nijni-Novgorod** ("Lower Novgorod"), a famous commercial city of Russia, and capital of the province of the same name; at the confluence of the Oka with the Volga; 274 miles E. of Moscow. The great fair brings buyers and sellers from all climes between Germany and China. For the convenience of those frequenting the fairs, there is an enormous market hall, and 60 blocks of buildings for booths, containing more than 2,500 apartments separated by fireproof walls. There are three annual fairs. The third, beginning July 15 and continuing into September, is still the greatest in the world. During the fair, the normal population is very largely increased. The value of goods sold at one of these fairs often exceeds \$90,000,000. At these fairs all foreign goods are supplied in smaller quantities, those of Russian showing an increase. Pop. (Est.) 115,000.

**Nike**, in Greek mythology, the goddess of victory.

**Nikisch, Arthur**, a Hungarian orchestral conductor; born in Azent, Miklos, Lichtenstein, Hungary, in 1855; disclosed extraordinary musical talent at an early age. In 1878 he went with Neumann to Leipsic, and was installed as assistant conductor in the Old Opera house. He remained there a year, drilling the chorus and soloists and conducting the smaller operas and operettas, and then went to the New Opera house as chief conductor. In 1889 he succeeded Herr Gericke as conductor of the Boston Symphony Orchestra, and in 1893 he resigned and returned to Hungary.

**Nile**, called by the Egyptians Hapi Mu, and by the Hebrews Sihor, the river of N. E. Africa, formed by the union of the Bahr-el-Abiad and the Bahr-el-Azrek. The total length of the Nile from its exit from the lake to the sea, is about 3,000 miles, meas-

ured along its course, or 2,200 miles in direct distance.

A marked feature peculiar to the great river of Egypt is that from its junction with the Atbara to its mouth, a distance of upward of 1,500 miles, it receives no affluent whatever, and yet it is able to contend with the burning sun, and scarcely less burning sands of Nubia. With the ancient Egyptians the river was held sacred; the god Nilus was one of the lesser divinities. Its annual overflow is one of the greatest marvels in the physical geography of the globe, for it has risen to within a few hours of the same time, and to within a few inches of the same height, year after year, for unknown ages. The question of the source of the Nile is at once the oldest and the most recent of geography. The Nile reservoir, for which the great dams at Assouan and Assiout have been constructed, will enable wide tracts of land to bear two crops a year instead of one, will bring waste districts into tillage, and will greatly increase the area of sugar cultivation. The reservoir will supply 1,000,000,000 cubic meters of water annually. The dam at Assouan is  $1\frac{1}{4}$  miles long. It is pierced by 180 openings, 23 feet side, and 7 feet wide, which have steel sluice gates.

**Niles, John Milton**, an American statesman; born in Windsor, Conn., Aug. 20, 1787; he founded the Hartford "Times" in 1817; was twice United States Senator; and in 1840 became Postmaster-General. He died May 31, 1856.

**Nilsson, Christine**, a Swedish operatic singer; born in Wexio, Sweden, Aug. 3, 1843; was educated in Sweden and France; made her debut at Paris in "La Traviata" in 1864; and in London, where she appeared in 1867, soon took rank as one of the foremost soprano singers. Marguerite is one of her best-known parts. She repeatedly visited the United States. She married (1872) M. Rouzand (who died in 1882), and in 1887 Count de Miranda.

**Nimbus**, a word applied, especially in sacred art, to a halo or glory surrounding the head in representations of divine or sacred personages.

**Nimrod**, grandson of Ham, who is supposed by some to have been the

founder of Babylon, where he reigned while Asshur ruled in Assyria. He is also supposed to be the first king, and the first conqueror. In the Scriptures, he is called "a mighty hunter before the Lord."

**Nine Pins**, a game with nine pins or pieces of wood set on end, at which a bowl is rolled for throwing them down.

**Ninety-six, Fort**, a defensive work in Abbeville co., S. C.; about 6 miles from the Soluda river; so-called on account of being 96 miles from the frontier fort of Prince George. It was the scene of many severe conflicts during the Revolutionary War.

**Nineveh, or Ninus**, an ancient and famous city; capital of the great Assyrian empire; said in Scripture to have been founded by Ninus or Nimrod. It was situated on the E. bank of the Tigris, opposite to the present Mosul. According to the accounts of the classic writers the city was of vast extent, 480 stadia, or more than 60 miles in circumference. Its walls were 100 feet high, broad enough for three chariots, and furnished with 1,500 towers, each 200 feet in height. After having been for many centuries the seat of empire, it was taken, after a siege of several years, and destroyed by the united armies of the Medes, under Cyaxares, and the Babylonians, under Nabopolassar, about 625 B. C. Modern excavations under Mr. Layard and Mr. George Smith have resulted in the discovery of important sculptures and inscriptions among the ruins.

**Ning-po**, a treaty-port of China; province of the Che-kiang; stands in a fertile plain; 16 miles from the mouth of the Takia (Ning-po) river, and about 100 miles S. of Shanghai. It is surrounded by a wall 25 feet high and 16 feet thick, and contains numerous temples, colleges, etc. The people, 250,000 in number, make sedge hats and mats, grow cotton, catch cuttle fish, and carry on an active trade, especially in the export of green tea. The imports are chiefly opium, cotton and woolen goods, tin and iron, medicines (in transit), dried "lunggans," kerosene oil, indigo, sugar, and tobacco, and the exports green tea, cuttle fish, sedge hats and mats, silk goods, and raw cotton. Apart from junks,



some 550 vessels, of 382,800 tons, enter the port every year.

**Niobe**, in Greek mythology, the daughter of Tantalus and wife of Amphion, King of Thebes, to whom she bore six sons and six daughters. According to the legend her children were slain by Apollo and Artemis, and she, plunged in grief, was changed into stone.

**Nipigon**, a lake in the province of Ontario, Canada; 30 miles N. W. of Lake Superior, with which it is connected by the Nipigon River. It is about 70 miles long, but its deeply indented coast line measures 580 miles; greatest depth 540 feet. The lake is studded with hundreds of Islands.

**Nipissing**, a lake in the province of Ontario, Canada, N. E. of Lake Huron, into which it drains at Georgian Bay. It is 50 miles long by 28 wide; its outlet is French River, 55 miles long.

**Nippur**, an ancient Babylonian city, 100 miles S. E. of Bagdad, between the Tigris and Euphrates. Since 1888 the excavations of its temples have yielded legal, literary, and commercial archival tablets, of the greatest historical importance.

**Nirvana**, a Buddhist term for the final emancipation from transmigration, and the attainment of eternal felicity.

**Nisan**, a month of the Jewish calendar, the first month of the sacred year, and seventh of the civil year, answering nearly to our March. It was originally called Abib, but began to be called Nisan after the captivity.

**Nish**, the chief town and commercial center of Southern Serbia, 152 miles S. E. of Belgrade; is the seat of a Greek bishop, and had a fairly strong citadel dating from 1737. The town was conspicuous in the Turkish wars from 1375 to 1878, when it was occupied by Serbia. The Austrians defeated the Turks here in 1689, and the Bulgarians occupied the town on Nov. 5, 1915, after the Germans had despoiled the country. Pop. (Est.) 25,000. See APPENDIX: *World War*.

**Nitric Acid**, the most important of the five compounds formed by oxygen with nitrogen. When pure it is a colorless liquid, very strong and disagreeable to the smell, and so acrid that it

cannot be safely tasted without being much diluted. It is known in the arts as "aqua fortis," and is obtained by distilling potassium nitrate or sodium nitrate with sulphuric acid.

**Nitroglycerin**, a violently explosive substance, easily prepared by dissolving glycerin in a mixture of equal measures of the strongest nitric and sulphuric acids, previously cooled, and pouring the solution in a thin stream into a large volume of water, when the nitroglycerin is precipitated as a colorless heavy oil.

**Niu-chwang**, or **Newchwang**, a city and treaty-port of Manchuria, China, on the Liao River, about 30 miles from its mouth, where at Ying-Kow are the foreign settlements and trade. It was occupied by the Japanese in July, 1904. Pop. est. 60,000.

**Nivelle**, **Robert George**, a French military officer; son of a French general and an English mother; born in his father's garrison in 1858; was educated at the famous Ecole Polytechnique; served in the China campaign of 1900-1; headed a special mission to Korea; was chief of staff in Algiers; became a member of the Superior Council of War; commanded the 7th French Army Corps in Alsace in the early part of the World War; distinguished himself in the great battle of the Marne; won the memorable battle on the Somme front; and in December, 1916, defeated the Germans at Verdun, and was made general-in-chief of all the French armies fighting in France, in succession to Field Marshal Joffre.

**Niven**, **William**, an American mineralogist; born in Bellskill, Scotland, Oct. 6, 1850. He came to the United States in 1879. In 1889 he discovered new minerals, yttrialite, thorogummite, in Slano Co., Tex.

**Nixon**, **John**, an American military officer; born in Philadelphia, Pa., in 1733. He was early prominent in opposition to the taxation demands of England, and in 1774 was made a member of the first Committee of Correspondence. He publicly proclaimed for the first time in Philadelphia, the Declaration of Independence; served with distinction through the Revolutionary War; was a member of the



navy board and director of the provision supply; and in 1783 was one of the organizers of the Bank of North America. He died in Philadelphia, Dec. 31, 1808.

**Nixon, John**, an American military officer; born in Framingham, Mass., March 4, 1725; was at the siege of Louisburg in 1745, also fought at Ticonderoga and the battle of Lake George, and distinguished himself at the battles of Lexington and Bunker Hill, where he commanded a regiment. In 1776, he was promoted Brigadier-General, and in 1777 served under General Gates. He retired from the army in 1780, and died in Middlebury, Vt., March 24, 1815.

**Nixon, Lewis**, an American ship-builder; born in Leesburg, Va., April 7, 1861. He graduated at the United States Naval Academy in 1882; was sent to the British Royal Naval College by the Navy Department; and was transferred to the construction corps of the navy in 1884. In 1890 he designed the battleships "Oregon," "Indiana," and "Massachusetts." He resigned from the navy to become superintendent of Cramps' shipyard, Philadelphia, Pa., and in 1895 he founded the Crescent shipyard, in Elizabeth, N. J., where in six years he built over 100 vessels, among them the submarine torpedo boat "Holland," the monitor "Florida," and the cruiser "Chattanooga." He has been prominent in New York Democratic politics.

**Noah**, the tenth male in descent from Adam, in the line of Seth; was the son of Lamech and the grandson of Methuselah. According to the Scriptural story he received the divine command to build an ark in which he and his family escaped the Deluge (Gen. v: 29; ix: 29).

**Noah, Mordecai Manuel**, an American journalist; born in Philadelphia, Pa., July 14, 1785. During his journalistic career in New York he was connected with seven newspapers. He made an unsuccessful attempt to found a Jewish colony on Grand Island, in the Niagara river. He died in New York, May 22, 1851.

**Noailles**, a French ducal family which dates from the 11th century, and played an important part in his-

tory from the reign of Louis XIV. to the Revolution. A grandson of the third duke, Louis Marie (1756-1804), served in the American Revolutionary War under his brother-in-law Lafayette, embraced for a while the French Revolution, and defended San Domingo against the British.

**Nobel, Alfred Bernhard**, a Swedish chemist and physicist; born in Stockholm, Sweden, Oct. 21, 1833. In 1863 Alfred took out a patent for the manufacture of an explosive composed of nitroglycerin and ordinary blasting powder, and in 1864 a second patent. In 1867 he invented dynamite; in 1876 gelatinous nitroglycerin; in 1889 ballistite, which led the way to the invention of smokeless powder. Alfred invented also artificial gutta-percha; manufactured cannon, and, with his brother Louis, developed the petroleum deposits at Baku, in the Caucasus. He lived for a long time in Paris, but had a villa and laboratory at San Remo, Italy, where he died Dec. 10, 1896.

Nobel left his fortune of \$9,200,000 to found a prize fund, the annual interest of which was to be divided into five equal parts (each amounting to about \$40,000, the sum available), to be distributed every year to the persons who, during the year, had done best in (1) physical science; (2) chemistry; (3) physiology or medicine; (4) idealistic literature; and (5) the advancement of universal peace; in 1906, the last prize was awarded Pres. Roosevelt for his initiative in the peace between Russia and Japan.

**Robert's Test-plates**, finely-ruled glass plates, so named from Robert, a German optician, used for testing the power of microscopes. Engraved with a diamond some of these plates have the almost incredible number of 225,-187 spaces to the inch.

**Nobility**, that distinction of rank in Old World society which raises a man above the condition of the mass of the people.

In the United States the National Constitution declares (Art. I., Sec. 14) "No title of nobility shall be granted by the United States; and no person holding any office of profit or trust under them shall, without the consent of Congress, accept of any

present, emolument, office, or title, of any kind whatever, from any king, prince, or foreign State." Congress sparingly gives its consent for a person in the service of the government to accept a decoration or other mark of honor from another government. Private citizens are under no constitutional restrictions.

**Noble, Annette Lucile**, an American author; born in Albion, Orleans co., N. Y., July 12, 1844; became a frequent contributor to magazines, and has written several stories.

**Noble, John Willock**, an American lawyer; born in Lancaster, O., Oct. 26, 1831; was graduated at Yale University in 1851; enlisted in the 3d Iowa Cavalry in 1861; was promoted colonel and brevetted Brigadier-General of volunteers; was United States attorney for Missouri, at St. Louis, in 1867-70; and Secretary of the Interior under President Harrison, in 1889-93. He died March 22, 1912.

**Noble, Louis Legrand**, an American poet; born in Lisbon, N. Y., Sept. 26, 1813. He died in Ionia, Mich., Feb. 6, 1882.

**Noble, Lucretia Gray**, an American novelist; born in Lowell, Mass. At an early age she removed to Wilbraham, Mass.

**Noctiluca** ("night light."), a phosphorescent marine infusorian, extremely abundant around American and other coasts, one of the chief causes of the "phosphorescence" of the waves. It is a spherical animal, its substance is remarkably spongy, and the phosphorescence is said by Allman to have its seat just underneath the rind.

**Nocturne**, in painting a night-piece; a painting exhibiting some of the characteristic effects of night light. In music, a composition in which the emotions, particularly those of love and tenderness, are developed. The nocturne has become a favorite style of composition with modern composers of music for the pianoforte.

**Noddy**, a genus of birds differing from terns in having the bill slightly angular, thus exhibiting an approach to gulls, and the tail not forked, but somewhat wedge-shaped.

**Nogaret, Stanislas Henry Lucien de**, a French colonist; born in Marseilles, France, in 1682; was edu-

cated for the bar, but entered the army and served in Canada for several years, and in 1716 was appointed commander of Fort Rosalie, in Louisiana. He contributed to the welfare of the colony and others. Died in Paris in 1759.

**Noguchi, Hideyo**, a famous Japanese scientist, born November 24, 1876, at Inawashiro, Japan. Prof. Noguchi was noted for his extensive research in yellow fever, and it was while trying to solve the relationship between the African yellow fever and that of America that he succumbed to this disease at the West African Hospital at Accra. He discovered the germ of trachoma in 1927, and was the first to ever successfully cultivate the rabic virus. The serums that he discovered greatly influenced the treatment of rabies, rattlesnake bite, and infantile paralysis.

**Nogi, Count Maresuki**, Japanese soldier; born in Choshu, Japan, in 1849; took part in the revolution of 1868, in suppressing the Satsuma Rebellion, 1877, in the Chino-Japanese War 1894-1895, and 1904-1905 commanded at the siege and fall of Port Arthur. He died Sept. 13, 1912.

**Nolle Prosequi**, a term used where a plaintiff or a prosecuting attorney for the public, discontinues a suit, either wholly or as to some count, or as to some defendants.

**Nomad**, a roaming or wandering shepherd; one who leads a wandering life, and subsists by tending herds of cattle, which graze on herbage of spontaneous growth. In history, nomads or nomades, are tribes of men without fixed habitation. The nomades of ancient times were generally tribes devoted to pastoral pursuits; for the Greeks and Romans knew of no races subsisting wholly by the chase. The vast regions of Mongolia are inhabited by nations which still retain their wandering habits.

**No man's Land**, a name applied to outlying districts in various countries, especially to a strip ceded by Texas to the United States in 1850, for many years without any government, now constituting Beaver co., Okl.; to a small island 3 miles S. W. of Martha's Vineyard, Mass.; and to a strip of land bordering on Pennsylvania. Dela-

ware, and Maryland, still in dispute between those States because of the displacement of early boundary stones.

**Nome**, a city in Alaska. Pop. (1920) 2,000.

**Nominalism**, the doctrines of certain philosophers in the 11th century, that general objects, such as trees, etc., have no realities similar to them, and exist but as names or words.

**Non Compos Mentis** ("not of sound mind"), an expression used of a person who is not of sound understanding, and therefore not legally responsible for his acts.

**Nonconformists**, in English history, those who declined to conform their worship to that by law established. They were of two kinds: First, those who, being religious, worshiped nowhere; second, those who attended the services of some other religious denomination than the Established Church. It was more frequently used of the latter class. The name was first applied to those who declined to conform to the enactment of the Act of Uniformity of Edward VI., passed in 1549. It was revived and applied to the 2,000 clergymen, who had to surrender their livings on account of their inability to conform to the more celebrated Act of Uniformity of Charles II., first enforced on Aug. 24, 1662. Etymologically viewed, a Dissenter and Nonconformist somewhat differ. The former word denotes that he feels differently from Churchmen, that his sympathies go in a different direction; the latter word refers, not to his feelings, but to his action with respect to public worship. The laws formerly existing required him to conform to that of the Established Church by attending the services and partaking of the Communion. The two words, dissenter and non-conformist, as generally referring to the same individual, became interchangeable.

**Nonsense, Fort**, the popular name of a defensive work on the hills overlooking Morristown, N. J., projected by Washington to keep his discouraged and famished army from revolting during the winter of 1779-1780. The soldiers worked on its construction till relief supplies were received. The Washington Association of New Jersey erected a memorial stone on the site of the earthworks in 1888.

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**Nonsuit**, in law, the stoppage of a suit during trial. This is done by the judge when, in his opinion, the plaintiff fails to make out a legal cause of action, or to support his pleadings by any evidence.

**Nootka**, an island of Canada on the W. coast of Vancouver Island, at the entrance of Nootka Sound, an inlet running about 10 miles inland.

**Nootka Dog**, a large variety of dog domesticated by the Indians of Nootka Sound, chiefly remarkable for its long wool-like hair, which, when shorn off, holds together like a fleece, and is made into garments.

**Nordau, Max Simon**, a German author; born in Pest, Hungary, July 29, 1849; followed various avocations, studying and practising medicine, traveling and writing for the press till 1880, when he went to Paris, and has since devoted himself to literature. He wrote a number of books, of which the best known, perhaps, in the United States is "Degeneration" (1893). He is a conspicuous figure in the Zionist movement. Died, 1922.

**Nordenfeldt, Phorsten**, a Swedish engineer; born in 1844; invented the machine gun that bears his name; also several forms of torpedoes, and a submarine torpedo boat; became chamberlain to the King of Sweden. He was given a reception by the American Society of Swedish Civil Engineers in Brooklyn, N. Y., April 22, 1899.

**Nordenskjold, Baron Nils Adolf Erik**, a Swedish Arctic explorer; born in Helsingfors, Finland, Nov. 18, 1832. After two preliminary trips to the mouth of the Yenisei, by which he proved the navigability of the Kara Sea, he successfully accomplished (June, 1878-September, 1879), in the celebrated "Vega," the navigation of the Northeast Passage, from the Atlantic to the Pacific along the N. coast of Asia. On his return he was made a baron of Sweden (1880). To Greenland, too, he made two expeditions; members of his party on the second occasion (1883) reached a point 140 miles distant from the E. coast, but without finding the ice-free interior Baron Nordenskjold believed to exist. Three years later he published a book on the icy interior of Green-

land. He died in Stockholm, Sweden, Aug. 12, 1901.

**Nordhoff, Charles**, an American author; born in Westphalia, Prussia, Aug. 31, 1830; was brought to the United States by his parents in 1835; and educated at Woodward College, Cincinnati, O. He served in the United States navy, making a tour around the world; and later was employed in whaling and mackerel fishing. He was in a New York publishing house in 1857-1861; on the New York "Evening Post" in 1861-1871; and on the New York "Herald" since 1874. He wrote a number of valuable books, including an excellent manual on the American system of government. He died in California, July 14, 1901.

**Nordica, Lillian**. See NORTON, LILLIAN.

**Norfolk Island**, an island in the W. Pacific; about half-way between New Zealand and New Caledonia; 400 miles N. N. W. of the former. The coasts are high and steep, and the surface generally uneven, rising in Mount Pitt, to 1,050 feet. The island is 6 miles long, and has an area of 13½ square miles. The soil is fertile and well watered, and the climate healthy. The people govern themselves, under the superintendence of the government of New South Wales; they fish, and supply provisions to passing vessels.

**Norfolk**, a city and port in Norfolk, Co., Va., on the River Elizabeth, 32 miles from the ocean. The harbor is safe and commodious and a large trade is done in cotton, ship-building, truck-farming, etc. It has an important navy yard at Portsmouth, and during the Civil War it was the chief Confederate Naval Station. Norfolk was organized as a town in 1682. Pop. (1930) 129,710.

**Normal School**, a school for the education of teachers. They originated in Germany, and were for a long period confined to that country. In the 19th century they rapidly increased in numbers, and were greatly improved in their internal organization. The course of instruction generally extends to three or four years, and in most parts of the United States the great majority of the teachers are graduates of the normal school. The first in the United States was opened at Lexing-

ton, July 3, 1839; and now most of the principal cities as well as the States have their normal schools.

**Norman, Henry**, an English author; born in Leicester, England, Sept. 19, 1858; studied in France; was graduated at Harvard in 1881, and continued his studies at Leipzig University in 1881-1883. He inaugurated, in 1882, the agitation for the preservation of Niagara Falls, resulting in the acquisition of the surrounding territory by the United States and Canadian governments. He was for several years on the staff of "The Pall Mall Gazette," and London "Chronicle"; and connected with the New York "Times" and Chicago "Tribune." He was elected to Parliament in 1900. He was author of "The Preservation of Niagara Falls"; "The Real Japan," etc. Knighted in 1906.

**Norman Architecture**, a style of architecture in the Middle Ages. The character of the exterior of buildings in the Norman style may be described as heavy and massive. The windows were generally small. Blind, narrow, arcades often occur in the facades and towers, sometimes interlacing, and sometimes not so, in several ranges, one above the other. The Norman style is of frequent occurrence in the case of the castles of the feudal lords.

**Norman Conquest**, in English history, the successful attempt made by William of Normandy in 1066 to secure the English crown from his rival Harold, son of Earl Godwin. It was no real conquest of the land and people by an alien race, but rather resembled in its chief characteristics the accession of William of Orange to the throne in 1688.

**Normand, Henrietta Rae**, an English painter; born in London, Dec. 30, 1859; married Ernest Normand, the painter, 1884. Medallist at Paris and Chicago Universal Exhibitions. She began to study art at the age of 13; exhibited her first picture at the Royal Academy in 1880; has been represented at the R. A. each succeeding year by important pictures.

**Normandy**, an ancient province of France, bordering on the English Channel, now divided into the departments of Seine-Inferieure, Eure, Orne, Calvados, and Manche; anciently comprised a portion of the kingdom of

Neustria, and was ceded to Rollo, Rolf, or Raoul, by Charles III., in 911. William I., Duke of Normandy, invaded England in 1066, and established a Norman dynasty, thereby uniting Normandy with the latter country. Philip Augustus conquered it in 1204, the French holding it till 1417, when it was recovered by the English, who held it till 1450, when it was finally wrested from them by Charles VII.

**Norman French**, the language spoken by the Normans at the time of the Conquest.

**Normans** (literally "north-men"), the descendants of the Northmen who established themselves in Northern France, hence called Normandy. Besides the important place occupied in history by the Normans in Normandy and England, bands of Normans established themselves in S. Italy and Sicily, and Norman princes ruled there from the middle of the 11th till the end of the 12th century.

**Norristown**, borough and capital of Montgomery county, Pa.; on the Schuylkill river and the Pennsylvania and other railroads; 16 miles N. W. of Philadelphia; is in an iron mining, limestone and sandstone section; manufactures machinery, cotton and woolen goods, carpets, hosiery, cigars, and farm implements; and contains a State Hospital for the Insane and a Friends' Home for the Aged. Pop. (1930) 35,853.

**Norse**, the language of Scandinavia. Old Norse is represented by the classical Icelandic, and still with wonderful purity by modern Icelandic.

**Norte, Rio Grande del**, a river of Mexico, rising in the Rocky Mountains and emptying into Gulf of Mexico; length about 2,000 miles. Its mouth is 1,200 feet wide, but is barred so as to afford entrance only to boats.

**North**, one of the four cardinal points of the compass. The N. is the direction of the true meridian from the equator to the North Pole. Magnetic N. is the direction of the magnetic meridian toward the N. magnetic pole.

**North, Frederick, 8th Lord**, an English statesman; born April 13, 1732; became prime minister in 1770; was largely responsible for the measures that brought about the loss of the American colonies. He died 1792.

**North Adams**, a city in Berkshire county, Mass.; on the Hoosac river and the Fitchburg and other railroads; 20 miles N. E. of Pittsfield; contains the Houghton Public Library, North Adams Library, North Adams Hospital, and several villages; and has nearby the Greylock Mountain, Natural Bridge, and E. terminus of the Hoosac tunnel. Pop. (1930) 21,621.

**Northampton**, city and capital of Hampshire county, Mass.; on the Connecticut river and the Boston & Maine and other railroads; 17 miles N. of Springfield; comprises several villages; is a trade center for a large area, in a tobacco, fruit, and farm produce section; manufactures silk, silk goods, cutlery, caskets, and elastic goods; and is the seat of Smith College (for women), Clarke Institute for Deaf-Mutes, Burnham and Capen schools, State Insane Asylum, Dickinson Hospital, Soldiers' and Sailors' Memorial Hall, Hillyer Art Gallery, Jonathan Edwards's old church (1st Cong.), and Lilly, Forbes, and Clark libraries. Pop. (1930) 24,381.

**North Carolina**, a State in the South Atlantic Division of the North American Union; bounded by Virginia, South Carolina, Tennessee and the Atlantic Ocean; one of the original 13 States; number of counties, 100; capital, Raleigh; area, 52,426 square miles; pop. (1920) 2,577,296; (1930) 3,170,287.

The E. and larger portion of the State is an undulating country descending toward the low and sandy coast. The W. part is mountainous, being crossed by two ranges of the Appalachian system, one forming the Tennessee boundary. The coast line has a length of 400 miles and consists of a range of low islands and sand bars, locally known as "banks," separated from the mainland by shallow sounds. From the "banks" in many places, project promontories, dangerous because of their shoals, Cape Hatteras, Cape Lookout, and Cape Fear being the chief ones.

North Carolina ranks fairly important as a mineral producer, the total output in 1928 being valued at \$11,480,000. Clay products, granite,



## North Carolina

white muscovite, which is highly prized for its transparency, make up the most important of the mining and quarry products.

The swamp lands have been drained, and the river bottoms are extremely fertile and yield enormous crops. In 1929 there were produced 48,568,000 bushels of corn, 735,000 bales of cotton, and 508,060,000 pounds of tobacco. It was estimated in 1930 that there were in the State, 803,000 swine, 537,000 cattle, and 312,000 cows.

In 1927 it was reported that there were in North Carolina, 2,984 manufacturing plants, employing 204,590 wage earners, paying \$158,394,000 for wages and yielding products having a combined value of over one billion dollars.

In 1928 the public school enrollment was 848,778. There were 834 high schools and academies with 85,961 pupils as well as 33 colleges with 16,644 students.

There were over eight thousand religious organizations, with about seven hundred and fifty thousand members, and church property valued at approximately fifteen million dollars. The strongest denominations were the Baptist, Methodist, and Presbyterian bodies in the order named.

In 1928 there were 5,223 miles of steam and 205 miles of electric railroads, the former representing four of the great systems.

The State Treasury reported a balance of \$10,708,355 in 1927, the State debt was \$152,442,600, and the assessed value of all property was \$2,794,931,069.

The governor is elected for a term of four years and receives a salary of \$5,500 per annum. Legislative sessions are biennial and limited to 60 days each. The legislature in 1917 had 50 members in the Senate and 120 in the House. There were 10 Representatives in Congress.

North Carolina was first partially colonized by a body of English under Raleigh in 1585, but no permanent settlement was made till 1663, when Charles II. made a grant of the territory to eight English gentlemen. The National Constitution was adopted in 1789. The State joined the Southern Confederacy May 20, 1861, and furnished some of the best troops in the

## North Dakota

Confederate army, having 125,000 in service and losing 40,000 by wounds and disease. The present constitution was amended in 1875, and again in August, 1900, when the suffrage was amended so that after Jan. 1, 1908, no one who is unable to read and write can vote.

**North Dakota**, a State in the North Central division of the North American Union; bounded by Manitoba, Northwest Territory, Minnesota, South Dakota, and Montana; admitted to the Union, Nov. 2, 1889; number of counties, 53; capital, Bismarck; area, 70,837 square miles; pop. (1920) 650,468; (1930) 682,448.

In 1925 the value of all farm property was estimated at \$1,191,036,966. In 1929 crops were as follows: wheat, 93,396,000 bus., barley, 36,210,000 bus., oats, 34,812,000 bus., corn, 16,384,000 bus., rye, 8,415,000 bus., flaxseed, 6,876,000 bus. In 1930 there were 1,236,000 cattle, 681,000 swine, 645,000 sheep.

In 1927 there were reported 307 manufacturing plants employing 3,260 wage earners, paying \$4,808,000 for wages, \$34,271,000 for raw materials and yielding combined products valued at \$44,632,000.

The greater part of the manufacturing is carried on in Fargo and Grand Forks.

The chief mineral product is brick clay.

The public school enrollment in 1928 was estimated at 172,539 pupils in daily average attendance. There were 361 high schools and academies with 22,579 pupils and 5 colleges and universities and professional schools with 4,075 students.

The steam railroad mileage in 1928 was 5,276 and there were 19 miles of electric railroad.

For the year ending June 30, 1927 the State's net receipts were \$19,328,280 and expenditures, \$18,987,801; the net debt for the year ending June 30, 1927 was \$4,519,097, and the assessed valuation of taxable property, personal and real, was \$998,180,492.

In 1929 there were 428 banks in the State with combined resources of \$495,243,000, time deposits, \$158,082,000, demand deposits, \$173,618,000; deposits in savings banks and trust companies amounted to \$1,553,000,000.

## Northeast Passage

The greater part of the manufacturing is carried on in Fargo and Grand Forks.

The chief mineral product is brick clay.

The public school enrollment in 1914 was 148,021, of whom 102,490 were in average daily attendance. There were 5,307 school buildings, 7,911 teachers, and public school property valued at \$11,553,442. For higher education there were 158 public high schools and 5 colleges and universities.

The steam railroad mileage in 1915 was 5,226, representing five of the great systems.

The State's net revenue in the year ended June 30, 1916, was \$4,472,538; expenditure, \$4,079,950; net debt at end of year, \$511,160; assessed valuation of taxable property, \$384,938,700; and tax levy, \$1,681,910.

The governor is elected for a term of two years and receives a salary of \$5,000 per annum. Legislative sessions are biennial and limited to 60 days. The Legislature in 1927 had 49 members of the Senate and 113 of the house; salary of each, \$5 per day. There were 3 Representatives in Congress.

The first permanent white settlement was made in 1780 by a party of French Canadians, near Pembina. Fur trading posts were established early in the 19th century and Lewis and Clarke spent the winter of 1804-1805 in the present town of Mandan. In 1810 Lord Selkirk built a fort at Pembina, supposing it to be British soil. The region was first opened to settlement by a treaty with the Dakota Indians in 1851. In 1861 the Territory of Dakota was organized with Yankton as capital. It was the scene of hard-fought Indian warfare. Dakota was divided into North and South Dakota, and these admitted to the Union as States in 1889.

**Northeast Passage**, a passage for ships along the N. coasts of Europe and Asia to the Pacific Ocean, formerly supposed likely to be of commercial value. The first to make the complete voyage by this passage was the Swedish explorer Nordenskjöld, after it had been from time to time attempted in vain for upward of three centuries.

## North Polar Expeditions

**Northern Drift**, in geology, a name formerly given to boulder-clay of the Pleistocene period, when its materials were supposed to have been brought by polar currents from the N.

**Northmen**, a name applied to the ancient inhabitants of Scandinavia, or Norway, Sweden, and Denmark, but more generally restricted to those searovers called Danes by the Saxons, who sailed on piratical expeditions to all parts of the European seas, made their first appearance on the coast of England in 787, and from the year 832 repeated their invasion almost every year, till they became masters of all the country under their King Canute, and reigned in England during the next 50 years, down to 1042, when the Saxon dynasty was restored in the person of Edward the Confessor.

In 885, they laid siege to Paris, but were at length bought off by Charles the Fat. Rollo, one of the most renowned of the Norman chieftains, after ravaging Friesland and the countries watered by the Scheldt, accepted the hand of a daughter of Charles the Simple, and received with her, under the tie of vassalage, possession of all the land in the valley of the Seine, from the Epte and Eure to the sea, which then went by the name of Normandy. They rapidly adopted the more civilized form of life that prevailed in the Frankish kingdom—its religion, language, and manners—but inspired everything they borrowed with their own vitality. Their conquest of England, in 1066, gave that country an energetic race of kings and nobles, on the whole well fitted to rule a brave, sturdy, but somewhat torpid people like the Anglo-Saxons.

**North Polar Expeditions**, expeditions of discovery in the Arctic regions. In 1517 Sebastian Cabot was commissioned by Henry VIII. to search for a N. W. passage round America to India; and from that time onward the discovery of such a passage became a favorite project with explorers.

Recent expeditions have generally been with the object of getting as near the pole as possible. Of later expeditions may be mentioned that of the unfortunate and ill-advised "Jeannette" (1879), sent out under the command of Lieutenant De Long, to explore the Arctic Sea through Bering Strait;

those of Mr. Leigh Smith in 1880 and 1881; in the latter of which he lost his vessel; and that of Sir C. Young for the relief of the former. An expedition sent out by the United States under Lieutenant Greely (1881-1884) established a new record in the approach to the pole, reaching 83° 24' N., 40° 46' W. but suffered greatly from famine, losing 19 out of 26 men. In 1888 S. Greenland was crossed sea to sea by Dr. Nansen. In 1892 Lieutenant Peary traced the Greenland coast to lat. 82° N. In 1895 Nansen reached the farthest point N. attained up to that time, 86° 14', or only 260 statute miles from the pole; but in 1899-1900 the Duke of Abruzzi's expedition reached 86° 33'. Robert E. Peary, U. S. N., was the first to reach the North Pole, accomplishing this successfully after many hardships on April 6, 1909. See ARCTIC EXPEDITIONS.

**Northrop, Birdsey Grant**, an American educator; born in Kent, Conn., July 13, 1817; was graduated at Yale in 1841; and at its divinity school in 1845. He introduced the observance of Arbor Day in schools, and was known as the "Father of Village Improvement Societies." In 1863 he was a member of the Board of Visitors to the United States Military Academy; in 1886 president of the National Association of School Superintendents; and in 1873 president of the National Educational Society. He died in Clinton, Conn., April 27, 1898.

**Northrop, Cyrus**, an American educator; born in Ridgefield, Conn., Sept. 30, 1834; was graduated at Yale in 1857; and at its law school two years later. He was professor of Rhetoric and English Literature at Yale in 1863-84; president of the University of Minnesota in 1884-1911; then president emeritus.

**Northrop, Harry Pinckney**, an American clergyman; born in Charleston, S. C., May 5, 1842. He was consecrated vicar-apostolic of North Carolina, and titular bishop of Rosalia Jan. 8, 1882. In 1883 he was transferred to the see of Charleston, S. C.

**North Sea, or German Ocean**, that portion of the Atlantic Ocean extending from the Straits of Dover to the Shetland Islands, bounded on the E. by Norway and Denmark; on the

S. by Hanover, the Netherlands, Belgium, and France, and on the W. by the British Islands; length 700 miles, breadth 420 miles. The fisheries of the North Sea are important, and employ many thousands of people. Lights both stationary and floating are placed along the difficult parts of the coasts for the convenience of traffic.

On Jan. 24, 1915, a British squadron overtook and defeated a German squadron here, that was speeding toward the English coast, sinking the battle cruiser "Blücher" and damaging other warships and having the cruisers "Lion" and "Tiger" damaged. It was the second important naval battle of the World War.

**North Star**, the star  $\alpha$  of the constellation Ursa Minor. It is close to the true pole, never sets, and is therefore of great importance to navigators in the Northern Hemisphere.

**Northwest Passage**, a passage for ships from the Atlantic Ocean into the Pacific by the N. coasts of the American continent, discovered 1850-51 by Sir R. MacClure; first traversed by Capt. R. Amundsen of Norway 1903-05.

**Northwest Territories**, the Canadian northwest region and islands (except the provinces of Manitoba, Saskatchewan and Alberta, formed Sept. 1, 1905, Keewatin and Yukon, q. v.) and including: Mackenzie, 562,182 sq. m.; Ungava, 354,961 sq. m.; and Franklin, 500,000 sq. m.; total area, 1,309,682 square miles; pop. (1928 Est.) 12,000.

**Government.**—Public affairs are administered by a lieutenant-governor, an executive council, and a legislative assembly.

**Industries.**—Mining is the most important industry and has materially increased since 1898. Gold mining is carried on principally in the Yukon region. Considerable gold mining was formerly carried on in Saskatchewan, but the industry has been decreased with the development of the Yukon fields. An entrance fee of \$15 for placer mining is charged, and the government requires a royalty of 10 per cent. of the entire output. There are supposed to be extensive oil regions in the Northwest Territories, but up to 1917 little had been done to develop them. The fishery industry is not extensively carried on.

## North Yakima

The law makes education compulsory for children between the ages of 12 and 16. Religious instruction is allowed only after 3 p.m. The Northwest Territories, including Manitoba, up to 1869 was governed by the Hudson Bay Company, through a chief governor and council. For administrative purposes the region was divided into four large sections which were again subdivided into 33 districts, in which were located 155 trading posts. The Hudson Bay Company relinquished its claims in 1869 and they passed into the possession of Canada in the following year.

**North Yakima**, city and capital of Yakima county, Wash.; on the Yakima river and the Northern Pacific railroad; 4 miles N. of Yakima; is in a lumbering and rich agricultural section; and has lumber and saw mills. Pop. (1920) 18,539.

**Norton, Andrews**, an American theologian; born in Hingham, Mass., Dec. 31, 1786; was graduated at Harvard in 1804. In 1819-1830 he was Dexter Professor of Sacred Literature at Harvard. He was among the most distinguished exponents of Unitarianism, equally determined in his protest against Calvinism and in his opposition to the school of Theodore Parker and the naturalistic theology. He died Sept. 18, 1853.

**Norton, Charles Eliot**, an American educator; born in Cambridge, Mass., Nov. 16, 1827; was graduated at Harvard in 1846. Dr. Norton was well known as a Dante scholar and an authority on art. He was Professor of the History of Art at Harvard in 1874-1898; author of "Historical Studies of Church Building in the Middle Ages," and editor of "Letters" of James Russell Lowell, Thomas Carlyle, etc. Died in 1908.

**Norton, Charles Ledyard**, an American author; born in Farmington, Conn., in 1837. He was graduated at Yale in 1859; was editor of the "Christian Union" 1869-1879, and in 1893 became editor of "Outing." His books, of travel, recreation, etc., were widely read. D. 1909.

**Norton, Charles Stewart**, an American naval officer; born in Albany, N. Y., Aug. 10, 1836; was graduated at the United States Naval

## Norway

Academy in 1855; and was promoted rear-admiral in 1897. During the Civil War he served with distinction at Charleston, Hampton Roads, and Port Royal. He commanded the South Atlantic station in 1894-1896, and was in charge of the Washington navy yard and station in 1896-1898. He was retired in 1898 on reaching the age limit. He died June 24, 1911.

**Norton, Lillian**, operatic singer, known as "Mme. Nordica," born Farmington, Maine, 1859, educated in New England and at Milan, Italy; married, first, Mr. Gower; second, Herr Dome. Has appeared in leading cities in Europe and America, and is best known in Wagnerian parts. Presented with gold medal by Prince Regent of Bavaria in 1903.

**Norway** (Norwegian, Norge), a country in the N. of Europe, bounded on the N. E. by Russian Lapland, and E. by Sweden, and washed on all other sides by the sea; by the Arctic Ocean on the N., the Atlantic and the North Sea on the N. W. and W., and the Skager-rack on the S. It is about 1,080 miles in length, and its greatest breadth is about 275 miles, but toward the N. narrows so much as to be in some places not more than 20 miles; area, 124,642 square miles; pop. (1928) 2,787,827.

The coast consists chiefly of bold precipitous cliffs, and is remarkable both for the innumerable islands by which it is lined, and the bays or fiords which cut deeply into it in all directions. The surface is very mountainous, particularly in the W. and N. Very commonly the mountain masses assume the form of great plateaux or table-lands, called fjelds or fields, as the Dovre Fjeld, Hardanger Fjeld, etc.

The climate of Norway is on the whole severe. The harbors on the W., however, are never blocked up with ice; but in places more inland, though much farther S., as at Christiania, this regularly happens. The farms are generally the property of those who cultivate them, and commonly include a large stretch of mountain pasture, often 40 or 50 miles from the main farm, to which the cattle are sent for several months in summer. The rearing of cattle is an extensive and profitable branch of rural economy. The horses are vigorous and sure-footed,

## Norwich

but of a diminutive size; the ponies are among the best of their kind, and are often exported. The reindeer forms the principal stock in the extreme N. Among the larger wild animals are the wolf, bear, elk, deer. The fisheries of Norway are of very great value; they include the cod, herring, mackerel, salmon, shark, walrus, seal, and lobster, the cod and herring fisheries being by far the most important. There are flourishing manufactures of textiles, machinery, tobacco, sugar, lucifer matches, etc. Norway is divided into 20 prefectures. The union existing with Sweden since 1814 was dissolved Oct. 16, 1905, after strained relations, and a plebiscite elected Haakon VII. (q. v.) King of Norway, by 257,710 votes against 68,852 votes. He has the veto power on the Storthing or Legislative Assembly. Members of the Storthing are elected every three years by voters who have themselves been elected by the citizens. It has two chambers, the Odelsting, containing three-fourths of the members, and the Lagthing, one-fourth. The great body of the people are Protestants of the Lutheran confession, which is the state religion. Other sects are tolerated, though government offices are open only to members of the Established Church. Elementary education is free and compulsory. Besides primary schools there are numerous secondary schools. There is but one university, that of Christiania. The people are almost entirely of Scandinavian origin. A small number of Lapps (called in Norway Finns) and Qvaens, reckoned at 20,000 in all, live in the N. The chief ports are Bergen, Christiania, and Trondhjem; the capital is Christiania. Since 1910 women have been entitled to vote and to be elected to public offices under the same conditions as men.

**Norwich**, city and town in New London county, Conn.; at junction of the Thames, Yantic, and Sketucket rivers and on the New York, New Haven & Hartford railroad; city 13 miles N. of New London; town contains several villages; city chiefly engaged in mercantile business, manufacturing, and shipping coal; was the birthplace of Benedict Arnold. Pop. (1930) 23,021.

**Norwich**, a city and capital of the

## Nottingham

county of Norfolk, England, with large textile and other industries, and a population (1921) 120,653.

**Nosology**, the branch of medicine which treats of the distribution and arrangement of diseases into classes.

**Nostalgia**, homesickness; a form of melancholia sometimes occurring in persons who have left their homes. The symptom from which it derives its name is an intense desire to return home; and this is accompanied by great mental and physical depression, which may end fatally.

**Notary**, a public official authorized to attest signatures in deeds, contracts, affidavits, and declarations. They protest bills of exchange and notes, draw up protests after receiving affidavits of mariners and masters of ships, and administer oaths. Also called a notary public.

**Note**, in music, a character which, by its place on the staff, represents a sound, and by its form determines the relative time or continuance of such sound.

**Notre Dame**, a title of the Virgin Mary, and the name of many churches in France, and particularly of the great cathedral at Paris, which was founded in the 12th century, and forms a prominent object in the city.

**Notre Dame, University of**, an educational institution in Notre Dame, Ind.; founded in 1842 under the auspices of the Roman Catholic Church.

**Nott, Eliphalet**, an American educator; born in Ashford, Conn., June 25, 1773. He was ordained a Presbyterian minister in 1795. He became president of Union College in 1804, where he remained till his death. He died in Schenectady, N. Y., Jan. 29, 1866.

**Nottingham**, a town near the middle of England, capital of the county of same name, 110 miles N. W. of London. It occupies a picturesque site overlooking the Vale of Trent, and has one of the finest and largest market places in the kingdom. The staple manufactures are hosiery and lace, the latter being a sort of specialty. There are also manufactures of cotton, woolen, and silk goods, and of articles in malleable and cast iron. Nottingham was a place of importance in Anglo-Saxon times, and was twice or thrice



taken by the Danes. Pop. (1921) 262,658.

**Noun**, a name; a word used to denote any object of which we speak, whether animate or inanimate, material or immaterial.

**Nourse, Henry Stedman**, an American author; born in Lancaster, Mass., April 9, 1831; was graduated at Harvard University in 1853; Professor of Ancient Languages at Phillips Exeter Academy in 1853-1855; captain of the 55th Illinois volunteers, and commissary of musters, 17th Army Corps, in 1861-1865. He became a member of various institutions and historical societies, and published many books, among them "The Story of the 55th Regiment of Illinois Infantry," "History of the Town of Harvard, Mass.," etc. Died in 1903.

**Nova Scotia**, a province of the Dominion of Canada, comprising the peninsula of Nova Scotia proper and the island of Cape Breton. It is bounded N. and N. W. by the Bay of Fundy, a small section of New Brunswick, the Strait of Northumberland, and the Gulf of St. Lawrence, and on the E. and S. by the Atlantic. The main peninsula is separated from Cape Breton by the narrow channel of the "Gut" of Canso. Its extreme length is 350 miles, and its breadth from 50 to 100 miles. The area is 21,428 square miles—a little smaller than West Virginia. The coast is indented with numerous inlets, that form a great number of good harbors. Exclusive of these, the coast-line is about 1,000 miles long. The soil is generally fertile. The climate is temperate and equable, the mean temperature about 42° F. The summer average is 61°, the winter 23°. Though there is much sea fog, the climate is generally healthy.

Agriculture is the principal industry; the chief products, hay, wheat, barley, oats, rye, Indian corn, potatoes, fruits, and berries. Other important industries are fishing, lumbering, and mining. The fisheries in 1927 yielded a total of \$9,500,000. The forests of Nova Scotia are large and valuable, but have been injured by extensive forest fires. Coal and gold are the chief minerals, the output of both constantly increasing. Ship building is extensively carried on, and manu-

facturing industries are rapidly increasing. There is a normal college and six classical colleges, a theological college (Presbyterian), 18 academies, and 1,700 grammar schools. There is a provincial legislature in two houses. The executive is a lieutenant-governor, appointed by the Governor-general of Canada. He has a council of nine members.

Nova Scotia is supposed to have been first visited and discovered by the Cabots in 1497. Its first settlers were French, who located themselves here in 1604, but were expelled by settlers from Virginia, who claimed the country by right of discovery. The French called the country Acadia. It was ceded to Great Britain in 1763, and joined to Canada in 1867. It receives a subsidy from Canada, toward the support of the provincial government. Imports (1914-15) \$16,327,786; exports, \$29,712,618. The chief cities are Halifax, Yarmouth, Truro, and Spring Hill. Pop. of the province (1929 Est.) 550,400.

**Nova Zembla**, two large islands in the Arctic Ocean, belonging to Russia, and lying N. from the N. E. corner of European Russia, separated from each other by the narrow strait Matotshkin Shar; length, 635 miles; breadth, 170 miles. The coasts swarm with seals, fish, and water-fowl. The interior is covered with stunted shrubs, short grass, and moss, and is frequented by reindeer, white bears, ermines, and Arctic foxes. It has no permanent inhabitants, but is visited by Russian hunters and fishers.

**Novel**, a prose narrative of fictitious events connected by a plot, and involving portraiture of character and descriptions of scenery.

**November**, the 11th month of the year. Among the Romans it was the 9th month at the time when the year consisted of 10 months, and then contained 30 days. It subsequently was made to contain only 29, but Julius Cæsar gave it 31; and in the reign of Augustus the number was restored to 30, which number it has since retained. Its festivals are All Saints (1), St. Hubert (3), St. Martin (11), St. Catherine (25), and St. Andrew (30).

**Novice**, in ecclesiology, a person of either sex who is living in a monastery, in a state of probation, previous

## Novgorod

to becoming a professed member of an order. The time of probation must be at least one year.

**Novgorod**, a government and its capital in Russia, the former immediately S. E. of that of Petrograd; area, 45,770 square miles; pop. (1921) 1,784,610; the latter on the Volkhof, near where it issues from Lake Ilmen; 122 miles S. E. of Petrograd; pop. (Est.) 30,000. The town is the cradle of Russian history, with records dating from 862. At one time it had about 400,000 inhabitants, its government was a sort of republic, and its greatness was due to its vast foreign trade, but with the founding of Petrograd and the development of Archangel it rapidly declined in importance.

**Novogeorgievsk**, or **Modlin**, a first-class fortress of Russia in Poland, at the junction of the Vistula and the Nareff, 19 miles N. W. of Warsaw. It forms the right flank of the line of defence of the Vistula against attacks from the W., the center of the line being at Warsaw, and the left flank at Ivangorod. It affords shelter for about 50,000 men and 12,000 are required to defend it.

**Noyon**, a town of France, in the Department of Oise, 78 miles N. E. of Paris; has a cathedral of the 12th-13th century and linen and cotton manufactories. It was the residence of Charlemagne, the birthplace of John Calvin, and the place where Hugo Capet was crowned King of France in 987. Pop. about 7,000.

**Novy, Frederic George**, an American chemist; born in Chicago, Ill., Dec. 9, 1864; was graduated at the University of Michigan in 1886; studied in Koch's laboratory, Berlin, in 1888; and experimented in the Pasteur Institute, Paris. He discovered the compound called "benzozone."

**Noyes, John Humphrey**, an American religious leader; born in Brattleboro, Vt., Sept. 6, 1811; was graduated at Dartmouth College in 1830; first studied law, and afterward divinity at Andover and New Haven. In 1838 he founded a community of Perfectionists near Putney, in 1847 one at Lenox, N. Y.; and subsequently one at Wallingford, Conn. He died April 13, 1886.

## Nullification

**Nubia**, a comparatively modern name for a large region of Africa, formerly a portion of Ethiopia, and extending on both sides of the Nile from Egypt to Abyssinia; touching the Red Sea on the E. and the desert on the W. At present the country is occupied by races belonging to several different stocks, which have in most places become much mixed in blood. The chief elements are Arab, more or less mixed with Nilotic and Negro blood. The Semitic Arabs are comparatively recent intruders to this region. They entered Nubia after occupying Egypt in the 7th century, but were resisted by the Christian Dongolawi kings till the 14th century, when the Arabs, assisted by a large contingent of Bosnians, became masters of the land. The various tribes, most of them active and warlike, are Moslems by faith, and till 1820 were ruled by their own chiefs. In that year Ismail Pasha made Nubia an Egyptian territory; and till 1881 it shared the fate of Egypt. Both in its lower and upper sections Nubia is for the most part an expanse of steppes or rocky desert. The great "Nubian Desert" lies E. of the Nile, opposite the great W. bend of the river. Below Khartum rain is almost unknown; the climate is excessively hot and dry, and, except in the river ports after the fall of the Nile, is very healthy.

**Nucleus**, in astronomy, a term used often to indicate the central part, or umbra, of a sun-spot, or one of the smaller dark spots contained within the umbra. It is also used to denote the central condensation in the head of a comet or in a nebula.

**Nuisance**, in law, anything which unlawfully annoys or incommodes, or causes damage or inconvenience. Nuisances are of two kinds, private and public (or common): private when they affect the lands, tenements, hereditaments, or comfort of particular individuals; public when they affect the whole community.

**Nullification**, in American politics, the doctrine formerly held by the extreme States' Rights party, of the right of a State to declare a law of Congress unconstitutional and void, and if the Federal government attempted to enforce it, to withdraw from the Union.

**Numa Pompilius**, the second King of Rome; said to have reigned from 714 to 672 B. C.

**Numbers**, one of the books of the Old Testament. It spans a period of nearly 39 years, commencing with the second year of the wanderings, the second month, and the first day, and terminating in the 40th year. The Jews and the Christians of early and mediæval times implicitly believed in the Mosaic authorship of Numbers.

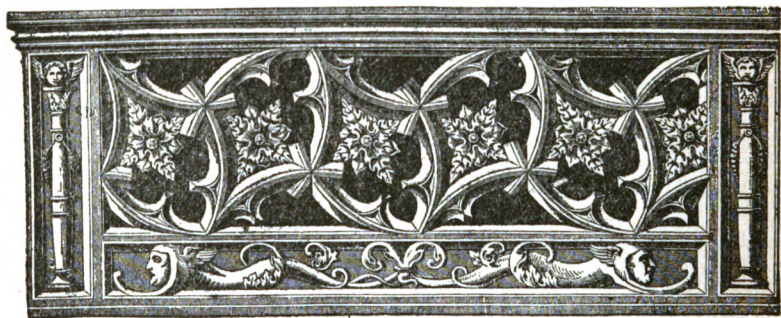
**Numbering Machine**, a machine for impressing consecutive numbers on account or record books (a paging-machine), coupons, railway certificates, bank-notes, railway tickets, etc.

**Numeral**, a figure or character used to express a number; as the Arabic numerals, 1, 2, 3, etc., or the Roman numerals, I, V, X, L, C, D, M., etc.

that of medals, both artistic and historical. The various branches of numismatics are (1) Greek, Phœnician, etc.; (2) Roman and Byzantine; (3) Mediæval and Modern; and (4) Oriental. The chief value of numismatics consists in the light which coins throw on history.

**Nun**, a virgin or widow who has consecrated herself to the service of God by the three vows of poverty, chastity, and obedience, and bound herself to live in a religious house under a certain rule.

**Nuncio**, a messenger; one who announces; one who brings tidings. Specifically, a papal ambassador of the second rank, not being a cardinal, who represents the Pope at a foreign court. An ambassador who is also a cardinal is styled a legate.



BALCONY OF A HOUSE IN NUREMBERG.

**Numeration**, the art of expressing in characters any number proposed in words, or of expressing in words any number proposed in characters. The chief terms used for this purpose are the names of the digits from 1 to 10, 100, 1,000, etc.

**Numidia**, the name given by the Romans to a part of the N. coast of Africa, corresponding to some extent with the modern Algiers, and lying between Mauritania and the Roman province of Africa; on the S. it reached to the chains of Mount Atlas.

**Numismatics**, the science and study of the coins of all nations. In the wider, though less accurate, acceptance of the term it includes also

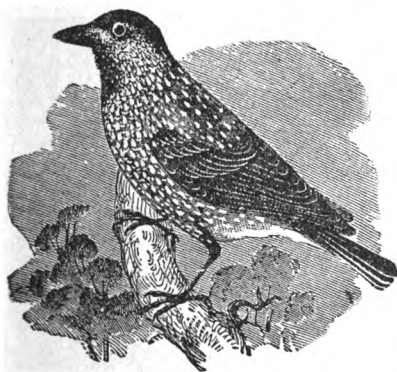
**Nuncupative Will**, a will made by the verbal declaration of the testator, and depending merely on oral testimony for proof, though afterward reduced to writing. Nuncupative wills are now abolished, but with a proviso that any soldier in actual military service, or any mariner or seaman at sea, or a person in sudden deadly peril, may dispose of his personal estate by making an oral statement before a number of witnesses.

**Nuremberg**, a city in the Bavarian province of Middle-Franconia, Germany; on the Pegnitz river; 95 miles N. by W. of Munich. It is the quaintest and most interesting town of Germany, on account of the wealth of

mediæval architecture which it presents in its many-towered walls, its gateways, its picturesque streets with their gabled house fronts, its bridges, and its beautiful Gothic fountains. Though the glory of Nuremberg's foreign commerce has long since passed away, the home trade is still of high importance. It includes the specialties of metal, wood, and bone carvings, and children's "Dutch" toys and dolls, which, known as "Nuremberg wares," find a ready sale in every part of Europe, and are largely exported to America and the East. In all there are close on 200 factories, producing also chemicals, ultramarine, type, beer, etc., and the town besides does a vast export trade in hops and import trade in colonial wares from the Netherlands. Pop. (1926 Est.) 268,000.

**Nut**, the name popularly given to the roundish fruit of certain trees and shrubs, consisting of a hard shell inclosing a kernel; as, a walnut, a cocoanut, a hazelnut, etc. In the United States, the name nut, without distinctive prefix, is commonly given to the hazelnut.

**Nut Cracker**, a bird of Southern Europe. They feed on the seeds of pine and beech, and on nuts, which they fix in some convenient crevice and



NUT CRACKER

hammer with the beak till the kernel is exposed. The plumage is of different shades of brown, studded with long white spots.

**Nutmeg**, the kernel of the fruit of *Myristica moschata* or *fragrans*. This fruit is a nearly spherical drupe of the size and somewhat of the shape of a small pear. The fleshy part is of a yellowish color without, almost white within, and four or five lines in thickness, and opens into nearly equal longitudinal valves, presenting to view the nut surrounded by its arillus, known to us as "mace." The nut is oval, the shell very hard and dark-brown. This immediately envelops the kernel, which is the nutmeg as commonly sold in the shops. The tree producing this fruit grows principally in the islands of Banda in the East Indies, and has been introduced into Sumatra, India, Brazil, and the West Indies. It reaches the height of 20 to 30 feet, producing numerous branches.

**Nutmeg State**, Connecticut. Its sons possess such a reputation for shrewd habits that they have been jocularly charged with manufacturing and selling nutmegs made of wood and colored to imitate the real article.

**Nuttall, Thomas**, an American naturalist; born in Settle, England, in 1786. By trade a printer, he came to the United States; traveled extensively in the Mississippi valley, exploring both the Missouri and the Arkansas rivers, and also visited the Pacific coast. Part of his observations appeared in "A Journal of Travels into the Arkansas Territory." He also published a "Manual of the Ornithology of the United States and Canada." From 1822 to 1834 he was Professor of Natural History in Harvard, but having inherited an estate in England, returned to that country and died there, Sept. 10, 1859.

**Nux Vomica**, the seeds of *Strychnos nux vomica*. They contain two alkaloids, strychnia and brucia, with a peculiar acid. *Nux vomica* is used in medicine.

**Nyanza**, an African word meaning lake, and especially applied to three bodies of water lying in the equatorial region of Africa. Of these the first was discovered in 1858 by Captain Speke, and by him named Victoria Nyanza. It is almost circular in form; 180 miles in diameter; has an area of 27,000 square miles; and is, with the exception of Lake Superior, the largest fresh water lake in the world. It is



drained by the Nile, and fed by its sources. See VICTORIA NYANZA.

**Nyasa, or Nyanja**, one of the equatorial great lakes of East Africa; about 260 miles S. E. of Tanganyika and 400 inland from the E. coast.

**Nyasaland**, a British protectorate, lying along the southern and western shores of Lake Nyasa, and extending towards the Zambesi; administered under the Colonial office by a governor and commander-in-chief, assisted by an executive and a Legislative Council; divided into fifteen districts. Nyasaland was the nucleus of what was in 1891 constituted the British Central Africa Protectorate, under an Imperial Commissioner. In 1907 this region, the Shire Highlands, and the greater part of the basin of the Shire river, were consolidated under the name of the Nyasaland Protectorate. Area, 39,315 square miles; pop. (1926) about 3500 Europeans, 1300 Asiatics, and 1,290,000 natives; chief settlement, Blantyre, in the Shire Highlands; seat of government, Zomba; chief imports, textiles, hardware, and provisions; exports, coffee, cotton, tobacco, beeswax, rubber and ground nuts.

**Nye, Edgar Wilson**, an American humorist; born in Shirley, Me., Aug. 25, 1850; settled in Wyoming Territory; studied law, and was admitted to the bar in 1876. Afterward he re-

moved to New York city, and became famous as a humorous lecturer and writer under the pseudonym of "Bill Nye." He died near Asheville, N. C., Feb. 22, 1896.

**Nylghau**, in zoölogy, the largest of the few true antelopes found in India,



**NYLGHAU ANTELOPE.**

where it is confined to the central parts. It frequents forests and low jungles, associating in small herds.

**Nymphs**, in Greek mythology, female divinities of inferior rank, inhabiting the sea, streams, groves, meadows and pastures, grottoes, fountains, hills, glens, and trees.





**O**, the 15th letter, and the 4th vowel of the English alphabet. The shape of the written letter was probably suggested by the circular formation of the lips in uttering the sound.

**O'**, in Irish proper names, a patronymic prefix corresponding to the Mac of the Highlands of Scotland; thus O'Connell means "the son of Connell."

**Oahu**, one of the Hawaiian Islands, between Molokai and Kauai, the most important island of the archipelago, on which is the capital Honolulu; length 37 miles; greatest breadth, 25 miles; area 598 square miles. It is crossed by two mountain chains running parallel N. W. to S. E., between which is a large dry plain now only useful as pasture land. Highest point Kaala, 3,890 feet. (Pop. 1920) 123,496.

**Oak**, any species of the genus *Quercus*, and specifically *Q. robur*. It is sometimes 60 to 100 feet high, with a girth of 70 feet. The branches are long and spreading; the leaves are sinuate-lobed, oblong-obovate; the catkins pendulous, appearing with the leaves in April or May; the fruit a cupola, externally with many adpressed imbricated scales. There are two varieties—one with sessile and the other with pedunculated flowers; the latter is the most common in natural woods.

**Oakland**, city and capital of Alameda county, Cal.; on San Francisco bay and the Southern Pacific and other railroads; 6 miles E. of San Francisco; has an excellent harbor, with 15 miles of water-front, jetties built by the Federal government and a mole built by one of the railroads; contains the residences of many San Francisco business men; has varied

manufactures, with (1914) 573 plants; products, \$28,522,000; is the seat of the Pacific Theological Seminary (Cong.), California College, and California Military Academy; was the original seat of the University of California, now at Berkeley; has many streets ornamented with grand live-oaks; was a refuge at the time of the earthquake in San Francisco. Pop. (1920) 216,361; (1930) 284,063.

**Oases**, fertile spots in a desert, due to the presence of wells or of underground water supplies. The best known and most historically famous are those of the Libyan Desert and the Sahara; they occur also in the deserts of Arabia and Persia, and in the Gobi. The French have created many oases in the Algerian deserts by sinking artesian wells. The chief vegetation of the African oases is palms—especially date and doom palms; with barley, rice, and millet, when the fertile area admits of settled occupation.

**Oat**, or **Oats**, a genus of edible grain cultivated extensively in all temperate climates, and though principally grown as food for horses largely used when ground into meal as human food. The oat crop of the United States in the calendar year 1929 reached 1,238,654,000 bushels from 40,217,000 acres, valued at \$538,445,000.

**Oates, Titus**, See **POPISH PLOT**.

**Oath**, a solemn affirmation or declaration made with an appeal to God for the truth of what is affirmed. By the appeal to the Supreme Being, the person making oath is understood to invoke His vengeance if that which is affirmed or declared is false; or, in case of a promissory oath, if the promise should be willfully broken.

**Oatmeal**, the meal of the oat deprived of its husk. It is one of the most important and valuable articles of food, containing a greater proportion of proteine compounds than the finest wheat flour.

**Obadiah** ("servant of God"), the name of various persons mentioned in the Old Testament. Also the fourth of the minor prophetic books. It contains only one chapter of 21 verses.

**Obelisk**, in architecture, a quadrangular, slender stone shaft, with a pyramidal apex. The width of the base is usually about one-tenth of the height, and the pyramidal apex has about one-tenth of the whole length. Obelisks were commonly formed from a single stone, mostly of granite. Obelisks were erected in pairs, and many still exist on the ancient sites, while others have been removed and set up elsewhere.

The obelisk was the Egyptian symbol of the supreme God. The Arabians called them Pharaoh's needles, and the Egyptian priests the figures of the sun. The first obelisk is said to have been erected by Rameses, King of Egypt, in the time of the Trojan war; it was 40 cubits high, and employed 20,000 men in building. There are about a dozen Egyptian obelisks erected in Rome. The obelisk presented to the United States now stands in Central Park, New York. Within the foundation and steps of the pedestal were found stones and implements engraved with emblematic designs. The Washington obelisk at Washington is 555 feet high, and was dedicated Feb. 22, 1885. The Bunker Hill Monument may also be properly called an obelisk; that and the Washington are the two most famous of American construction.

**Ober, Frederick Albion**, an American ornithologist, traveler, and author; born in Beverly, Mass., Feb. 13, 1849. He traveled extensively in Florida, the West Indies, Mexico, Spain, North Africa, and South America, and wrote: "Camps in the Caribbees"; "The Silver City" (1883); "Young Folks' History of Mexico"; etc. He died June 1, 1913.

**Oboron**, in mediæval mythology, the king of the fairies.

**Oboe**, a wind instrument of the reed kind, which at a very early date took

its place as one of the essential instruments of the orchestra.

**Obregon, Alvaro**, a Mexican farmer, inventor, and military officer; born in the State of Sonora about 1880; is of Yaqui Indian ancestry; followed agriculture with much success up to the Madero revolution against President Diaz in November, 1910; organized a small army and joined the Madero forces; became an ally and then an opponent of Villa; went with Carranza in the campaign against Huerta; was the hero of the battles of Pueblo and Mexico City; became Carranza's most efficient subordinate; and in 1916 was appointed Minister of War and Marine in the Provisional Government. He was elected President in 1920 and held office through this term until 1924. He was succeeded by Calles, and was re-elected the second time to the presidency July 1, 1928, to last six years beginning December 1, 1928. He was assassinated July 17, 1928, while Calles was still in office.

**Observatory**, a building devoted to the observation of astronomical, magnetic, meteorological, or other natural phenomena. The astronomical observatory is the one of most general interest. Astronomical observation began at an early date in China; the pyramids in Egypt seem in some way to have been associated with stellar observation; and the first historical observatory was founded in Alexandria 300 B. C. The first European observatory was built at Nuremberg by Bernard Walther in 1472, and this was followed in the 16th century by Tycho Brahe's famous observatory on the island of Hveen near Copenhagen, while another was erected by the Landgrave of Hesse at Cassel in 1561. Through the labors of Brahe practical astronomy became associated with the universities, so that Leyden and Copenhagen founded observatories. Observatories now exist in all parts of the globe.

**Obsidian**, (after Osidius, a Roman, who first brought it from Ethiopia), in mineralogy, a vitreous lava. Forms important lava streams in the Lipari Islands, Iceland, Mexico, etc. The ancient Mexicans used it for knives, and it is often mentioned in connection with their human sacrifices.

**O'Callaghan, Edmund Bailey**, an American historian; born in Mal-low, County Cork, Ireland, Feb. 29, 1797; was educated in Ireland and France; went to Quebec, Canada, in 1823, and was admitted to the practice of medicine in 1827. In 1870 he moved to New York city, where he died May 27, 1880. Among his publications are "History of the New Netherlands"; "Jesuit Relations"; "Documentary History of New York"; etc.

**Occultism**, the investigation of mysterious things, especially those that are supernatural; or supernatural power employed in human affairs as claimed by an astrologer; or modern theosophy, which claims a divine illumination and an insight into things hidden from ordinary people.

**Ocean**, the sea, using that term in its widest sense. Properly speaking, there is but one ocean or sea, all salt water bodies on the globe, with a few trifling exceptions like the Caspian, the Sea of Aral, and the Dead Sea, being more or less in complete communication with each other. Different portions of the ocean have received distinctive names. The Arctic, the Atlantic, the Indian, the Pacific, and the Antarctic oceans, five in all; or if the Atlantic and Pacific be separated into a N. and a S. portion by the equator, then there are seven in all. The unequal heating of portions of the vast expanse of water on the globe, the rotation of the earth, and other causes tend to keep the water in constant circulation and preserve it from being stagnant and impure. The winds also agitate the surface, producing waves. The attractions of the moon and sun cause tides. The area of the ocean is about 155,000,000 square miles, or nearly three-fourths of the whole surface of the earth. This space is distributed (in square miles), among the principal seas as follows: Arctic 5,000,000; Southern, 10,000,000; Indian 20,000,000; Atlantic, 40,000,000; Pacific, 80,000,000. This great volume of water largely modifies the temperature of the adjacent lands, tempering the heat of summer and the cold of winter. As far as observation has yet extended, the average depth of the ocean is not more than 2,000 fathoms, i. e., somewhat more than two miles.

**Oceania**, a name sometimes given to the fifth division of the globe, comprising all the islands which intervene between the S. E. shores of the continent of Asia and the W. shores of America. It naturally divides itself into three great sections—the Malay Archipelago, Australasia, or Melanesia, and Polynesia.

**Ocelot**, a carnivorous mammal peculiar to the American continent. The fur has a tawny reddish ground, marked with black spots, aggregated in spots and blotches. It ranges through the wooded parts of tropical America, from Arkansas to Paraguay. Length, about four feet, legs short. It is cowardly, but voracious, and destroys a vast number of animals for the sake of sucking the blood, which it prefers to the flesh. In captivity it is playful and gentle.

**Ochre**, a combination of peroxide of iron with water; but the name is generally applied to clays colored with the oxides of iron in various proportions. Ochres vary in color from a pale sandy yellow to a brownish red, and are much used in painting.

**Ochs, Adolph S.**, publisher of the New York "Times," born Cincinnati, O., March 12, 1858; son of Julius and Bertha (Levy) Ochs, who were natives of Germany. Young Ochs received a common school education, worked as newsboy and clerk in Knoxville, Tenn., and Providence, R. I., attending night school in the latter city; became a printer and publisher, and acquired the Chattanooga "Times," of which he is still proprietor, and in 1896 became publisher and principal owner of the New York "Times," which he has revived to wonderful success with his motto faithfully carried out, of "all the news that's fit to print."

**O'Connell, Daniel**, called the Liberator of Ireland and The Great Agitator, an Irish patriot; born in County Kerry, Ireland, Aug. 6, 1775. After receiving his education at the Roman Catholic College of St. Omer, and the Irish seminary at Douay, he became a student of Lincoln's Inn, London, in 1794, was admitted to the bar in 1798; and speedily rose to a large and lucrative practice as a special pleader. In 1809, he became popularly known by his fervent advocacy

of Catholic emancipation. He sat in the British House of Commons in 1828-1841, and became Lord Mayor of Dublin in 1841. The return of the Conservatives to power in that year was the signal for renewed political agitation in Ireland. Repeal of the Union was the object sought, and O'Connell placed himself at the head of the movement. A monster meeting to be held at Clontarf, Oct. 8, 1843, was estopped by the government, and O'Connell sentenced to pay a fine of \$10,000, and to be imprisoned one year. This judgment was shortly after reversed by the House of Lords, and O'Connell set at liberty. The return of the Whigs to power in 1836, and O'Connell's avowed adherence to that party, brought him into unpopularity with the "Irish" national party, which he had swayed for half a century, and his health also failing him, he retired from public life. He wrote, "Memoirs of Ireland." While making a journey to Rome, he died in Genoa, Italy, May 15, 1847.

**O'Connell, William Henry**, an American ecclesiastic; born at Lowell, Mass., Dec. 8, 1859; pursued theological studies at Rome, where he was ordained priest (1884), and became rector of the American College in Rome (1895). He was made bishop of Portland, Me., consecrated in Rome, and installed in the cathedral at Portland in 1901. In 1905 he was named as special papal envoy to the Emperor of Japan, and received from the Mikado the Grand Cordon. Later, he succeeded Archbishop Williams in the See of Boston (1907). In 1911, he was raised to the cardinalate and enthroned early in 1912.

**O'Connor, Charles**, an American lawyer; born in New York city, Jan. 22, 1804; was admitted to the bar in 1824, while still a minor. He became senior counsel for Jefferson Davis when the ex-Confederate President was indicted for treason, and was conspicuous in the suits against William M. Tweed in 1871. In 1869 he was elected president of the Law Institute of New York; in 1872 was nominated for President of the United States by one of the numerous conventions of that year, despite his protest, and was defeated; and in 1876 appeared before the Electoral Commission in support of the claims of Sam-

uel J. Tilden. He died in Nantucket, Mass., May 12, 1884.

**O'Connor, John Francis Xavier**, an American educator; born in New York city, Aug. 1, 1852; was graduated at St. Francis Xavier College, and was a professor at Georgetown University, Boston College, and St. Francis Xavier College. He has lectured on Christian and Greek art, Wagner operas, and cuneiform Assyrian.

**Octahedron**, in geometry, a solid contained by eight equal and equilateral angles. It is one of the five regular bodies.

**October**, the 8th month of the so-called year of Romulus, which became the 10th when Numa changed the commencement of the year to Jan. 1, though it retained its original name.

**Octopus**, in zoölogy, the typical genus of the family Octopodidæ. The body is oval, warty, or cirrose, finless; arms long, unequal, suckers in two rows, mantle supported in front by the branchial septum. In the male the third right arm is hectocotylized. Found on the coasts of the temperate and tropical zones. Forty-six species are known, varying in length from one inch only to a number of feet. They are solitary animals, frequenting rocky shores, and are very active and voracious; the females oviposit on seaweeds or in empty shells. The term "octopus" is applied in the United States to monopolies supposed to resemble the octopus in their grasping and voracious character.

**Odd Fellow**, a member of the Independent Order of Odd Fellows, a secret fraternal society instituted in England in the 18th century, and now having extensive lodges in the United States, etc. Its organization is in lodges and encampments, grand lodges, grand encampments, and the Sovereign Grand Lodge of the World. The first lodge in the United States was established in 1819. The Sovereign Grand Lodge of the World now has under its jurisdiction over 2,500,000 members, the majority of whom are in the United States and Canada. The Encampment branch has over 233,000 members, and the Rebekah Degree lodges nearly 752,950 members, brothers and sisters. The American order is not in affiliation with the English order, the "Man-

chester Unity of Odd Fellows," which now reports a membership of about 1,509,900, and is largely represented in the United States. The Rebekah lodges admit female relatives of male Odd Fellows. There is also an organization of colored Odd Fellows.

**Ode**, a poem of lyrical character, supposed to express the poet's feelings in the pressure of high excitement, and taking an irregular form from the emotional fervency which seeks spontaneous rhythm for its varied utterance.

**Oder**, one of the most important rivers of Germany, rising in the Oderberg on the tableland of Moravia; 1,900 feet above sea-level; flowing through Prussia, Silesia, Brandenburg, and Pomerania; and emptying into the Stettiner Haff, whence it passes into the Baltic by the triple arms of the Dievenow, Peene, and Swine, which inclose the islands of Wollin and Usedom. It has a course N. W. and N. of 550 miles, and a basin of 50,000 square miles. At its nearest point, it is 35 miles from the heart of Berlin to the N. E. It is heavily fortified in its northern reaches, and is regarded as the point of final stand of the German army in case of an attack upon Berlin from the east. Canals connect the river with the Spree, the Havel, and the Elbe. The only tributary of importance for navigation is the Warthe. On its banks are Ratibor, Brieg, Breslau, Frankfort, Stettin, and Swinemünde.

**Odessa**, the third city of Russia in size and foreign trade, at the N. W. angle of the Black Sea, in the government of Kherson. It is the seaport for the basins of the Dnieper and the Dniester, and is about half way between the two estuaries. Its bay is open and easy of access, with sufficient depth of water to float the largest ships near the city, and an area of 14 square miles. The harbor, which is artificial, is formed of two moles, and is capable of accommodating over 200 vessels at one time. The city is built on a terrace from 100 to 155 feet in height; is defended by two batteries toward the sea; and has a citadel on the east side, which commands the city and port. Odessa

has frequently been subjected to hostile attack. Pop. (1923) 316,740.

**Odoacer**, the first barbarian King of Italy, son of one of Attila's officers; born about 434. Odoacer was assassinated March 5, 493.

**O'Donovan, William Rudolf**, an American sculptor; born in Preston co., Va., March 28, 1844; in the Civil War he served in the Confederate army; after the war established a studio in New York city; became associate of the National Academy in 1878. He made, with Thomas Eakins, the statues of Gen. U. S. Grant and Abraham Lincoln for the Memorial Arch, in Prospect Park, Brooklyn, N. Y.

**Odyssey**, a celebrated epic poem attributed to Homer, and descriptive of the adventures of Ulysses in his return home from the siege of Troy.

**Œcumenical**, universal, an epithet applied to the general councils of the Church. From the time of the Council of Chalcedon (451) the patriarchs of Constantinople took the title of œcumenical, in the same sense as the epithet Catholic is used in the Western Church.

**Oehlenschläger, Adam Gottlieb**, the greatest dramatic poet of the Scandinavian North; born in Vesterbro, near Copenhagen, Denmark, Nov. 14, 1777. He commenced his career on the stage, but abandoned the profession for literature, and finally became Professor of Æsthetics in his native city. Among his greatest works is "The Death of Balder." He died in Vesterbro, Jan. 20, 1850.

**Œsophagus**, in anatomy, a slightly flexed canal, between the pharynx and the stomach, inclining to the left in the neck, the right in the upper thorax, and the left again through the posterior mediastinum. It is narrow and flat in the neck, and rounded in the lower and longest part. It passes through the diaphragm, and terminates nearly opposite the 10th dorsal vertebra in the cardiac orifice of the stomach. The passage of the food is caused by muscular contraction through the action of the parvagum nerve.

**Official Plants**, medicinal plants which have a place in pharmacopœias of different countries.



**Offing**, a nautical term for that portion of the sea beyond the mid-line between the coast and the horizon. Also for the position of a vessel, in that part of the sea beyond the mid-line between the coast and the horizon.

**Ogden**, city and capital of Weber county, Ut.; on the Ogden and Weber rivers and on the Union and Southern Pacific and other railroads; 37 miles N. of Salt Lake City; has abundant water-power, numerous hot mineral springs, and mountain cañons; is the seat of the Weber Stake Academy, Sacred Heart Academy, State Industrial School, and State Schools for the Blind and Deaf and Dumb; and is chiefly engaged in mining, lumber and flour milling, iron founding, and the manufacture of shoes and woolen goods. Pop. (1930) 40,272.

**Ogden, Aaron**, an American military officer; born in Elizabethtown, N. J., Dec. 3, 1756; took an active part in the events preceding the Revolutionary War; and in the war was successively paymaster, captain and aide-de-camp, being engaged on various missions, and receiving the personal approbation of Washington. After the war he studied law, was United States Senator, and governor of New Jersey. In the War of 1812 he was commander-in-chief of the New Jersey State militia. He was president of the Cincinnati at the time of his death, April 18, 1839.

**Ogden, Francis Barber**, an American inventor; born in Boonton, N. J., March 3, 1783; served as aide-de-camp to General Jackson in the battle of New Orleans, Jan. 8, 1815; is said to have been the first to apply the principles of the expansive power of steam, and the use of rectangular cranks in marine engines. In 1817 the first engine ever built on these lines was constructed in Leeds, England. The first screw propeller successfully introduced into practical use was launched by John Ericsson on the Thames, May, 1837, and was called the "Francis B. Ogden." The building of the first screw propeller for American waters was superintended by Mr. Ogden in Liverpool, where he was United States consul in 1829-1840. He died in Bristol, England, July 4, 1857.

**Ogden, Frederick Nash**, an American military officer; born in Baton Rouge, La., Jan. 25, 1837; in the Civil War served in the Confederate army. He was president of the Red Cross Association of Louisiana during the yellow fever epidemic of 1878, and superintendent of the World's Fair in New Orleans in 1884. He died May 25, 1886.

**Ogden, Herbert Gouverneur**, an American cartographer; born in New York city, April 4, 1846. He served with the Nicaragua expedition in 1865, the first naval exploring expedition to the Isthmus of Darien in 1870, and was in charge of the party sent to locate the international boundary between British Columbia and Alaska, in 1893.

**Ogdensburg**, a city and port of entry in St. Lawrence county, N. Y.; on the St. Lawrence river and the New York Central & Hudson River and other railroads; 175 miles N. W. of Albany; is largely interested in lumbering and dairying; manufactures gloves, shoes, and silks; has large elevators and trade in grain; and contains a Federal Building, the St. Lawrence State Hospital for the Insane (in suburbs), and a Refuge for the Aged. Pop. (1930) 16,915.

**Oglesby, Richard James**, an American lawyer; born in Oldham co., Ky., July 25, 1824. He served as a 1st lieutenant in the Mexican War; in 1849 was among the goldseekers who made the overland trip to California, where he engaged in mining for two years. In 1851 he returned to Illinois and resumed the practice of law; was elected State Senator in 1860, but resigned to enter the army in the Civil War. He was colonel of the 8th Illinois Volunteers, and before the close of the war was promoted Major-General. He was three times governor of Illinois, being first elected in 1864, reelected in 1872, and again in 1885. He was United States Senator in 1873-79; declined reelection; died April 24, 1899.

**Oglethorpe, James Edward**, an English military officer and philanthropist; born in London, England, Dec. 21, 1696. It was through his efforts that a colony was formed of insolvent debtors and persecuted Protestants, whom he brought to the Unit-

ed States and settled in Georgia, in 1733. He remained in the United States till 1743, when he returned to England. He died in Cranham Hall, Essex, England, in 1785.

**Oglethorpe, Fort,** a defensive structure erected by General Oglethorpe in 1737, on St. Simon's Island, Ala., near the mouth of the Alabama river. It was the scene of considerable fighting during the Revolution, as well as the War of 1812. Now in ruins.

**O'Gorman, Thomas,** an American clergyman; born in Boston, Mass., May 1, 1843; was educated in the United States and in France; received the degree of D. D. directly from Pope Leo XIII. in 1893; and was consecrated Roman Catholic Bishop of Sioux Falls, April 19, 1896. He was first president of the College of St. Thomas, St. Paul, Minn.; and professor at the Catholic University of America, Washington, D. C. He wrote "A History of the Roman Catholic Church in the United States."

**O'Hara, Theodore,** an American lawyer, author of the poem "The Bivouac of the Dead"; born in Danville, Ky., in 1820. He was a lawyer and journalist; at one time an officer in the United States navy; connected with the Lopez and Walker movements; served as captain and major in the Mexican War; afterward, for a year, in the United States cavalry; and in the Civil War as a colonel on the Confederate side. He died in Barbour co., Ala., June 7, 1867.

**O'Higgins, Ambrosio,** real name Ambrose Higgins, a South American administrator; born in County Meath, Ireland, about 1730. He went to Spain when a young man, where he was educated, and then became a trader in Chile. He obtained a commission in the army and rose rapidly; was captain-general of Chile 1788-1796, and viceroy of Peru from June 6, 1796, till his death in Lima, Peru, March 18, 1801.

**O'Higgins, Bernardo,** a Chilean general and statesman, son of Ambrosio O'Higgins; born in Chillan, Aug. 20, 1776. He was educated in England; was a prominent leader of the Chilean patriots in 1810, and in 1813 was made commander of the

army. In the conflict with Spain in 1814 the combined forces of O'Higgins and Carrera were defeated at Rancagua and they fled across the Andes. O'Higgins joined San Martin in the invasion of Chile and a few days after their victory at Chacabuco (Feb. 12, 1817) he was made supreme dictator of Chile. The independence of the country was formally proclaimed Feb. 12, 1818, and was decided by the victory of Maipo, April 5, 1818. Like that of his father, the rule of O'Higgins was an excellent one. He was forced to resign by a revolution, Jan. 28, 1823, and retired to Peru. He died in Lima, Peru, Oct. 24, 1842.

**Ohio,** a State in the North Central Division of the North American Union; bounded by Michigan, Lake Erie, Pennsylvania, West Virginia, Kentucky, and Indiana; admitted to the Union, Feb. 19, 1803; capital, Columbus; number of counties, 88; area, 41,040 square miles; pop. (1920) 5,810,498; (1930) 6,639,837.

The surface of the State is an undulating plain with a transverse ridge crossing it in a N. E. and S. W. direction just N. of the center of the State. This ridge forms the watershed between those rivers belonging to the St. Lawrence and those of the Ohio river systems. The Ohio river forms over half the E., and the entire S. boundary of the State, and though it has an average descent of eight inches to the mile, is navigable its entire distance along the State. Lake Erie forms over two-thirds the N. boundary and provides Ohio with several excellent harbors.

The mineralogical resources of Ohio are very extensive. Iron is found in several counties, and is adapted to fine class castings. Carbonate of lime, hydraulic cement, and quicklime are extensively manufactured. The sandstone near Cleveland is used extensively for building purposes in the N. States and Canada. One of the most productive of recent years was 1928 when the value of the total mineral output was \$211,041,000, pig iron leading with 9,099,000 long tons followed by coal, 15,095,000 long tons, petroleum, 7,030,000 barrels and clay products, over 97,000,000 tons.

The soil is divided into three grades,

limestone soil, clay of the uplands, and swamp lands in the North-western part of the State. The former are well adapted to agriculture, all the fruits, cereals and vegetables of the temperate zone thriving well here.

In 1926, the estimated value of all farm property was \$1,945,630.975. In 1929, crops were as follows: corn led with a total output of 128,407,000 bu., followed by oats, 49,826,000 bu., and tobacco, 39,782,000 pounds. In 1930, livestock was estimated as follows: 2,065,000 sheep, 1,963,000 swine, 1,634,000 cattle, 908,000 cows, 500,000 horses and 31,000 mules.

Manufacturing interests in 1927 were represented by 10,961 plants, employing 669,097 wage earners, paying \$968,181,000 in wages, \$2,877,126,000 for raw materials and yielding products of a combined value of \$5,230,326,000. The principal products are iron, steel, and rubber products, slaughtering and meat packing, flour, automobiles, glass, matches, etc.

For the year ending June 30, 1929 there were reported 378 National Banks with resources totaling \$9,259,000,000, demand deposits, \$340,751,000 and time deposits, \$303,060,000. There were also 725 State banks and Trust Companies with deposits of \$14,213,000,000.

In 1928 there were 1,294,657 pupils enrolled in the public schools with 41,671 teachers. For higher education: 1,176 high schools with 295,882 pupils; 57 colleges and universities with 61,809 students and 4,091 professors and instructors.

In 1925 it was estimated that there were over 9,000 religious organizations with around a million and a half members and church property valued at over a hundred million dollars. The leading denominations were the Roman Catholic, Methodist, Lutheran, Presbyterian, Baptist, United Brethren, Congregational in the order stated.

In 1928 there were 8,867 miles of steam and 3,486 miles of electric railroads in operation the former representing thirteen of the great systems.

The State's net receipts in the year ending June 30, 1927, were \$52,571,424; expenditures, \$52,786,501. There was a net debt of \$19,127,865; the

assessed valuation of all taxable property was \$13,495,738,240.

The governor is elected for a term of two years; annual salary is \$10,000; legislative sessions are biennial, without time limit; the legislature in 1928 had 36 members of the senate and 130 members of the house; salary of each, \$1,000 per annum. There were 22 representatives from the State in Congress.

The site of what is now the State of Ohio was probably first explored by La Salle in 1670. About 1750 the English laid claim to the region and rivalry with the French brought on the French and Indian Wars. In 1763 the whole region was ceded to England by France. A New England organization, the Ohio Company of Associates, composed chiefly of revolutionary soldiers under the leadership of General Rufus Putnam, purchased a large tract of land from the government in the territory northwest of the Ohio River. This was the first public sale of land by the government.

Marietta and Columbus were founded in 1787 and Cincinnati in 1789, while settlements in the southern part increased rapidly. When danger from the Indians was renewed by General Wayne's victory over them in 1794, settlements at Zenia, Dayton, Hamilton, Chillicothe and Zanesville were established, with Chillicothe the seat of government for the territory. In 1802 the territory was admitted to statehood.

In the Civil War, Ohio furnished 346,236 men and in the war with Spain 15,354. When the United States entered the World War, Ohio gave 251,300 men and 2,200 nurses to the country and made an enviable record for successful liberty loan and other war drive activities.

Six United States presidents have come from Ohio—Grant, Hayes, Garfield, Harrison, McKinley and Harding.

**Ohio**, a river of the United States, called by the French explorers, after its Indian name, la Belle Riviere (the Beautiful River), next to the Mis-

## Oil City

souri the largest affluent of the Mississippi. It is formed by the union of the Allegheny and Monongahela at Pittsburg, Pa., and flows W. S. W. 975 miles, with a breadth of 400 to 1,400 yards, draining with its tributaries, an area of 214,000 square miles. In its course it separates the States of Ohio, Indiana and Illinois from the States of West Virginia and Kentucky. It is usually navigable from Pittsburg.

**Oil City**, a city in Venango county, Pa.; on the Allegheny river and the Pennsylvania and other railroads; 132 miles N. of Pittsburg; is metropolis of the Pennsylvania petroleum region; has oil refineries; manufactures iron tubes, oil supplies, and foundry products. Pop. (1930) 22,075.

**Oklahoma**, (Choctaw Indian word, meaning "Home of the Red Men"), a State in the South Central Division of the North American Union; comprises the former Oklahoma and Indian Territories and No-Man's-Land; admitted into the Union Nov. 16, 1907; area, 70,057 sq. m.; capital, Oklahoma City. Pop. (1920) 2,047,397; (1930) 2,391,777.

The State lies wholly within the Mississippi Basin; is watered principally by the Red and Arkansas rivers; has an altitude of from 400 feet in the S. E. to 3,500 in the N. W.; is wooded in the central valleys and has great forests in the E. counties; and possesses in general a soil of remarkable fertility. Equable weather conditions prevail the year around; winters are mild and open; summers comfortable; average temperature about 60°; rainfall 20-40 inches.

In its mineral industry, Oklahoma ranked among the foremost States in production, the total value for 1928 being \$486,634,000, petroleum leading with a total output of 249,558,000 barrels, followed by coal, 3,050,000 long tons and zinc, 192,042 short tons. There were over 19,000 miles of oil pipe lines in this State.

In 1926 the value of all farm property was estimated at \$1,048,757,322. Crops in 1929 were divided as follows: corn, 48,330,000 bus., wheat, 44,478,000 bus., peanuts, 45,600,000 lbs., oats, 20,592,000 bus., pecans, 7,650,000 lbs. Livestock was reported: 1,899,000 cat-

## Oklahoma City

tle; 1,008,000 swine; 634,000 cows; 479,000 horses; 313,000 mules; 167,000 sheep.

In 1927 it was reported that there were 1,373 manufacturing plants employing 27,932 wage earners paying \$209,418,000 for raw materials and \$30,785,000 for wages and yielding a combined value of \$371,718,000.

There were over 6,000 miles of steam railroads representing six of the great systems in this State in 1928.

Oklahoma is in the Federal Reserve District number 10, under the National Banking Act of 1913, and in the year ending June 30, 1929, had 292 National Banks with resources totaling \$4,465,000,000.

In 1928 there were 632,259 pupils enrolled in public elementary schools with a daily attendance of 457,983.

Financial reports of June 30, 1927 showed net receipts, \$31,535,274; expenditures, \$27,997,857; net debt, \$3,074,803; assessed valuation of all taxable property, \$1,697,367,213; tax levy, \$0.36.

The Five Civilized Tribes of Indians, Seminoles, Creeks, Cherokees, Choctaws, and Chickasaws, occupy reservations covering nearly 20,000,000 acres.

The governor is elected for four years, annual salary, \$4,500; Legislative sessions biennial, limited to 60 days; Legislature in 1917 had 44 members of the Senate and 108 in the House; salary of each, \$6 per day; Representatives in Congress, 8.

Oklahoma, with the exception of No-Man's-Land, was originally selected for permanent reservations for the Indian tribes which formerly lived E. of the Mississippi. Its development has been a marvel along all lines of human activity.

**Oklahoma City**, city and capital of the State of Oklahoma, on the N. fork of the Canadian river and the Atchison, Topeka & Santa Fé and other railroads; 31 miles S. of Guthrie; is the commercial, financial, and manufacturing metropolis of the State; seat of Epworth University (M. E.), State Military Institute, St. Mary's Academy, and a Carnegie Public Library; had in 1916 an assessed property valuation of \$65,112,190. Pop. (1930) 185,389.

**Oku, Hokaku, Baron**, a Japanese soldier; born in Fukuoka-ken, in 1844; commanded the 5th Division in the Chino-Japanese War (1894-1895) and the 2d Army in the Russo-Japanese War (1904-1905); distinguished himself at Kin-chow and Naushan Hill; created Baron 1895; promoted chief of staff 1906.

**Okuma, Shigenobu, Count**, a Japanese statesman; born in Hizen, Kiushiu, in 1837; began advocating a constitutional government in 1868; became Secretary of the Interior, Minister of Finance (1873), Foreign Minister (1896), and Premier (1898); lost a leg in an assault for urging the opening of Japan to the world's trade; founded, endowed, and maintained Waseda University; compiled "Fifty Years of New Japan" (1908).

**Olaf, or St. Olaf**, one of the most celebrated of the Norwegian kings, born about 995; was defeated and slain at the battle of Stiklestad (1030); is the patron saint of Norway.

**Old-Age Pensions**, annuities granted to aged and needy persons beyond the working period of life. The scheme is of comparatively recent development—in fact it is still in the formative stage, every country that has made provision for this class of people having done so on a different basis. In general, it may be said that all plans so far adopted rest on the principle of self-help. In other words, persons liable to be in want in old age must contribute regularly, from a specified age till no longer able to work, a fixed percentage of their earnings. To the principal so accumulated the country, or such minor division as may have adopted the scheme, adds another fixed percentage, and from the two principals the pensions are paid from the time the persons have to cease working till their death.

**Old Catholics**, the name assumed by a body of German priests and laymen who refused to accept the dogma of Papal Infallibility, and, in consequence of its definition, formed themselves into a separate body. In September a congress was held at Munich, when it was resolved to seek reunion with the Greeks. In 1872 a

second congress was held at Cologne. The first synod (1874) made confession and fasting voluntary; the second (1875) reduced the number of feasts, and admitted only such impediments to marriage as were recognized by the State; the third (1876) permitted priests to marry, but forbade them to officiate after marriage. This prohibition was annulled by the fifth synod (1878).

**Old Dominion, Virginia**. In colonial days acts of Parliament, relating to the Virginia settlements (which at that time included all the British dominions in North America) always designated them as the "Colony and Dominion of Virginia." In the maps of the time this colony was described as "Old Virginia," in contradistinction to the New England settlements, which were called "New Virginia."

**Old Glory**, a popular name of the American flag, first applied in 1831 by a Salem, Mass., skipper named William Driver, who was at that time captain of the brig "Charles Doggett." Captain Driver was a successful deep sea sailor, and at the time of bestowing the name "Old Glory" on the flag he was preparing to shape the brig's course to the Southern Pacific. Just before the brig left Salem, a young man at the head of a party of friends saluted Captain Driver on the deck of his vessel and presented him with a large and beautifully made American flag. It was sent aloft, and when flung to the breeze Captain Driver christened it "Old Glory." He took it to the South Pacific, and years after, when old age forced him to relinquish the sea, he treasured the flag as an old friend. In 1837 Captain Driver removed to Nashville, Tenn., and he died there in 1886. Previous to the outbreak of hostilities between the North and South "Old Glory" was flung to the breeze every day from the window of Captain Driver's Nashville house, but when the conflict began the old flag had to be secreted. It was kept out of sight till General Nelson's wing of the Union army appeared in Nashville, Feb. 27, 1862, when Captain Driver presented it to the general to be hoisted on the capi-



tol. It was run up, and Captain Driver himself did the hoisting. Its name and history soon became familiar to all the soldiers in General Nelson's command, and from Captain Driver's cherished flag the name "Old Glory" was extended by the boys in blue to every flag of the Union.

**Old Guard, The**, a celebrated body of troops in the Army of Napoleon I. It was distinguished for bravery, and at the battle of Waterloo made the final charge of the French army.

**Old Hickory**, a nickname of Andrew Jackson, first given by his soldiers in 1813. It is supposed by some to have originated in the example Jackson set his soldiers, when short of rations, of feeding on hickory nuts; but Parton says "It was not an instantaneous inspiration, but a growth. First of all, the remark was made by some soldier who was struck with his commander's pedestrian powers, that the general was 'tough.' Next it was observed that he was as 'tough as hickory.' Then he was called 'Hickory.' Lastly, the affectionate adjective 'old' was prefixed, and the general thenceforth rejoiced in the completed nickname, usually the first-won honor of a great commander."

**Old Ironsides**, the name by which the United States frigate "Constitution" is popularly known.

**Old World**, the Eastern Hemisphere, so named in popular parlance subsequent to the discovery of the New World, in 1492.

**Oleander**, the common and sweet-scented oleander. They have lanceolate coriaceous leaves, with parallel veins and fine roseate flowers. The former is a native of India, now naturalized in many warm countries. Sweet-scented oleander is wild in Central India, Scinde, Afghanistan, and the outer Himalayas to 5,500 feet. Often cultivated in India, etc. All parts of the plants, especially the root, are poisonous.

**Olefiant Gas**, the most abundant illuminating constituent in coal-gas. It may be obtained by the destructive distillation of coal, but more readily by the action of sulphuric acid on alcohol. It is a colorless gas with a faint odor.

**Oleomargarine**, in chemistry the more oily part of beef fat, prepared ex-

tensively in this country by allowing the melted fat to cool slowly to 30°, when most of the stearin crystallizes out and is removed by pressure. Another brand of oleomargarine is prepared by adding nut oil to suet fat in such proportion as to reduce the melting point to that of butter fat. Both kinds are largely used in making up artificial butter and cheese. In the United States this article, when on sale as a substitute for butter, must be clearly marked with its true name.



COMMON OLEANDER.

**Olfactory Nerves**, in anatomy, the fifth pair of cerebral nerves ramifying on the Schneiderian membrane, producing the sense of smell, and also sensibility to the nose.

**Oligarchy**, a form of government in which the supreme power is vested in the hands of a small exclusive class; the members of such a class or body.

**Oliphant, Laurence**, English author and traveler; born at Cape Town in 1829; died Dec. 23, 1888.

**Oliphant, Margaret (Wilson)**, a Scotch novelist; born in Walyford, Scotland, April 4, 1828; died June 25, 1897. She lived in Liverpool, London, Rome, and for nearly 30 years in Windsor, England. She was a prolific authoress, publishing over 110 books, besides numerous articles and essays.

**Olive.** The olive-tree is rarely above 25 feet high, but is of slow growth, and reaches a great age. Two varieties are known, the Oleaster and the cultivated variety. The former is spiny, and has worthless fruit; the many sub-varieties of the latter are unarmed and have large, oily fruits. Its original seat was probably Western Asia, and perhaps Europe as well. It was very early brought into cultivation, and in classic times was sacred to Minerva. It was very abundant in Palestine, and even yet there are fine olive plantations near Jerusalem, Nabulus (formerly Shechem), etc. It is often mentioned in the Old Testament by the Hebrew name zaith, and in the New by that of elai. Both are correctly translated olive. The Mount of Olives was named from it, and Gethsemane means an oil press. Enormous quantities of olives are produced in Southern California, those from the vicinity of Santa Barbara being considered especially good in quality. The unripe fruits are pickled, and the ripe olives used for the manufacture of olive oil.

**Olive Oil,** a salad oil extracted from the olive by pressure.

**Oliver, Charles Augustus,** an American ophthalmologist; born in Cincinnati, O., Dec. 14, 1856; became surgeon to the Will's Eye, and the Philadelphia Hospitals, and honorary and corresponding member of many scientific societies. His publications include "Correlation Theory of Color Perception;" "Ophthalmic Methods in Recognition of Nerve Diseases;" etc.

**Oliver, Frank,** a Canadian official; born in Peel county, Ontario, in 1853; removed to Manitoba in 1873; elected to the Northwest Council in 1883, to the Legislative Assembly in 1888, and to the Commons in 1896 and 1900; and became Secretary of the Interior in 1905.

**Oliver, Paul Ambrose,** an American military officer; born on shipboard in the English channel, July 18, 1830; was educated in Germany; settled in the United States, where he was engaged in business till the outbreak of the Civil War, when he entered the army as 2d lieutenant in the 12th New York Volunteers. He was in some of the hardest fighting of the

war, and was brevetted Brigadier-General of volunteers, March 13, 1865. In 1870 he established a powder factory near Wilkesbarre, Pa., where he put into use machinery of his own invention to minimize the dangers of explosion. He became a member of the American Institute of Engineers, the Loyal Legion, and other organizations. He died May 18, 1912.

**Olives, Mount of, or Mount Olivet,** a ridge running N. and S. on the E. side of Jerusalem, its summit about half a mile from the city wall, and separated from it by the valley of the Kidron. It is composed of a chalky limestone, the rocks everywhere showing themselves. The olive trees that formerly covered it, and gave it its name, are now represented by a few trees and clumps of trees which ages of desolation have not eradicated. The central summit rises 200 feet above Jerusalem, and presents a fine view of the city, and indeed of the whole region. From the summit, three days before his death, Christ beheld Jerusalem, and wept over it, as he foresaw the desolation impending over it, which, forty years afterwards, made the city a heap of ruins.

**Olivet College,** an educational institution in Olivet, Mich.; founded in 1844 under the auspices of the Congregational Church.

**Olmedo, Jose Joaquin,** a South American poet; born in Guayaquil, Ecuador, May 20, 1781. His verses have been highly praised and widely circulated. He died Jan. 19, 1847.

**Olmsted, Frederick Law,** an American landscape architect; born in Hartford, Conn., April 26, 1822. In cooperation with Calvert Vaux he prepared the general design for Central Park in New York. He was also consulted regarding the park systems of Boston, Chicago, Buffalo, and other cities, the United States Capitol grounds and terrace, the grounds of the World's Columbian Exposition in Chicago, etc. He died in 1903.

**Olney, Jesse,** an American geographer; born in Union, Conn., Oct. 12, 1798. In 1828 he first published "A Geography and Atlas," which became a standard work for 30 years. He wrote a "History of the United States"; and a volume of poems,

"Psalms of Life." He died in Stratford, Conn., July 31, 1872.

**Olney, Richard,** an American lawyer; born in Oxford, Mass., Sept. 15, 1835; was graduated at Brown University in 1856, and at Harvard Law School in 1859; practised law in Boston; was United States attorney-general in 1893-1895; and Secretary of State of the United States in 1895-1897. Died, 1917.

**Olympia,** city and capital of Thurston county and of the State of Washington; on Puget Sound, the Des Chutes river, and the Northern Pacific and other railroads; 45 miles S.W. of Seattle; is in a notable fire forest section; has abundant water power; is chiefly engaged in the lumber industry; and, besides the State Capitol, contains the State Library, County Court House, St. Martin's College (R. C.), St. Amable and Providence academies, and St. Peter's Hospital. Pop. (1920) 7,795.

**Olympia,** a celebrated valley of Elis, in Greece, on the right bank of the Alpheus, and the seat of the Olympic games. The Sacred Grove (called the Altis) of Olympia, enclosed a level space about 4,000 feet long and nearly 2,000 broad, containing both the spot appropriated to the games and the sanctuaries connected with them. It was finely wooded, and in its center stood a clump of sycamores. The most celebrated building was the Olympieum, or Olympium, dedicated to Olympian Zeus. It was designed by the architect Libon of Elis in the 6th century B. C., but was not completed for more than a century. It contained a colossal statue of the god, the masterpiece of the sculptor Phidias. Modern excavations have disclosed numerous valuable relics.

**Olympiads,** the periods of four years between each celebration of the Olympic games, by which the Greeks computed time from 776 B. C., first year of the first Olympiad, till 394 A. D., second year of the 293d Olympiad.

**Olympic Games.** These games, so famous among the Greeks, said to have been instituted in honor of Jupiter by the Idæi Dactyli, 1453 B. C., or by Pelops, 1307 B. C., revived by Iphitus 884 B. C., were held at the beginning of every fifth year, on the banks of the

Alpheus, near Olympia, in the Peloponnesus, now the Morea, to exercise the youth in five kinds of combats, the conquerors being highly honored. The prize contended for was a crown made of a kind of wild olive, appropriated to this use. The festival was abolished by Theodosius, A. D. 394. In 1896, after a lapse of more than 1,500 years, these games were revived at Athens. They began April 6 and continued for five consecutive days. The number of spectators was enormous. Athletes from various countries of the world competed for prizes, and some of the principal contests were won by Americans. The games consisted of foot racing, wrestling, fencing, swimming, etc. The king crowned the victors with olive branches. In July, 1900, the second series was held in Paris, during the exposition; in 1904 the third series, at the St. Louis exposition; in 1906 the fourth series, at Athens, Greece; in 1908 the fifth series, at London, England.

**Olympus,** a celebrated mountain of Thessaly, on the border of Macedonia, 30 miles N. of Larissa. Its highest peak is 9,745 feet above the sea, and is covered with snow during two-thirds of the year. It was regarded by the ancient Greeks as the abode of the gods, and the palace of Jupiter was supposed to be on the summit.

**Omaha,** a city, port of entry, and county-seat of Douglas co., Neb.; on the Missouri river. It is built on a plateau broken by occasional bluffs.

There are extensive iron works which make and roll railroad iron, one of the best plants in the United States for separating, smelting, and refining ores of zinc, lead, copper, silver, and gold, and many machine shops. In 1925 there were 415 manufacturing plants, using a capital of \$279,218,330, and having products valued at \$339,004,023. There is an immense trade in live stock, lumber, grain, hats and caps, boots and shoes, and groceries. There are also large manufactories of brick, carriages, white lead, and linseed oil. The prosperity of Omaha, which greatly increased after the Civil War, is due to its railroads, and especially to the Union Pacific which was completed in 1869. An iron bridge, 2,750 feet long, built at a cost of \$3,500,000, here spans the river.

The name Omaha is derived from a tribe of Dakota Indians. The city was founded in 1854 on a scale which anticipated its rapid growth. The capital of the territory was first situated here, but was later removed to Lincoln. In 1898 the city was the scene of a noteworthy exhibition. Pop. (1920) 191,601; (1930) 214,006.

**Omaha, University of**, a coeducational institution in Omaha, Neb.; founded in 1880 under the auspices of the Presbyterian Church.

**Omahas**, a tribe of North American Indians living in E. Nebraska. They number about 1,200. The name is derived from an Indian word meaning "those who go up the stream, or against the current."

**Omar Khayyam**, a Persian poet, astronomer, and mathematician; born in Nishapur in Khorasan. His scientific works, which were of high value in their day, have been eclipsed by his "Rubaiyat," a collection of about 500 epigrams in praise of wine, love, and pleasure, and at the same time depressingly pessimistic. He died in Nishapur, in 1123.

**Omar Pasha**, a Turkish general; born in Plaski, Turkey, in 1806 (according to some authorities, in 1811). On the accession of Abdul-Medjid in 1839, Omar Pasha was raised to the rank of colonel, and in 1842 appointed military governor of the Lebanon. On the invasion of the Danubian Principalities by the Russians in 1853 Omar Pasha collected an army of 60,000 men and, crossing the Danube in presence of the enemy, intrenched himself at Kalafat, where he successfully withstood the Russians; after they withdrew from the Principalities Omar Pasha entered Bucharest in triumph in August, 1854. Feb. 9, 1855, he embarked for the Crimea, and on the 17th of the same month repulsed with great loss 40,000 Russians who attacked him at Eupatoria. In September, 1861, he was charged to pacify Bosnia and Herzegovina, which were again in insurrection. This being accomplished he attacked the Montenegrins, captured Cetinje and overran the country in 1862. He died April 18, 1871.

**Omega**, the name for the Greek long o. It was the last letter in the

Greek alphabet, as alpha was the first. Inscriptions on tombstones, public documents, etc., very often begin with these two letters, meaning, "In the name of God."

**Omen**, a sign believed to prognosticate a future event. Omens have been common among most nations, but were chiefly received in the ruder ages, and among the more ignorant of a people. Even in the present day in many parts of the United States and England, a superstitious belief in omens exists.

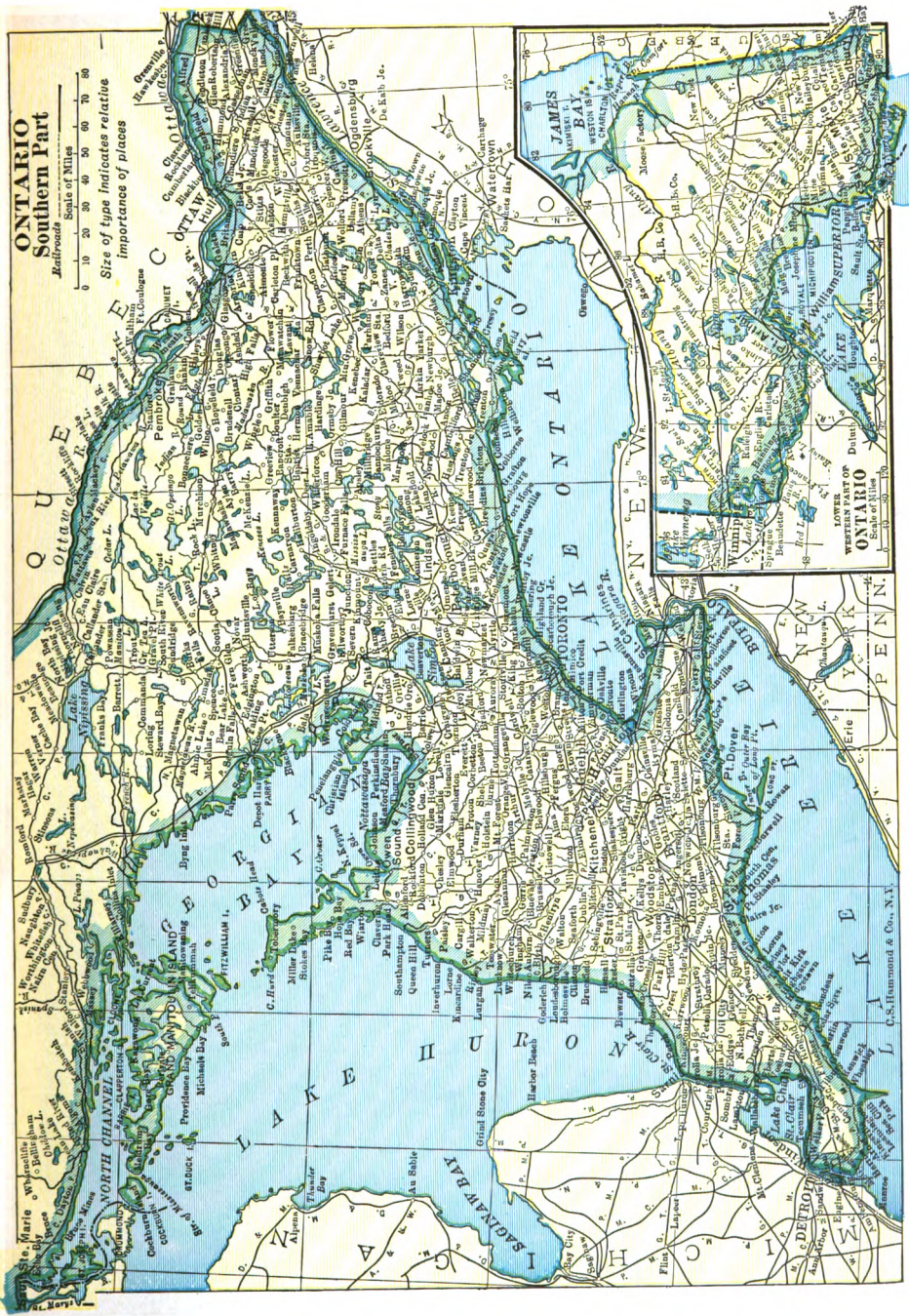
**Omnibus**, a Latin word signifying "for all," and now applied in several languages to the well-known vehicle used for the conveyance of passengers at a cheap rate.

**Omri**, a general of the army of Elah, King of Israel, who, being at the siege of Gibbethon, and hearing that his master Elah was assassinated by Zimri, who had usurped his kingdom, raised the siege, and being elected king by his army, marched against Zimri, attacked him at Tirzah, and forced him to burn himself and all his family in the palace in which he had shut himself up. After his death, half of Israel acknowledged Omri for king; the other half adhered to Tibni, son of Ginath, which division continued four years. When Tibni was dead, the people united in acknowledging Omri as King of all Israel, and he reigned 12 years. Omri built the city of Samaria, which became the capital of the kingdom of the ten tribes. It appears under the name of Beth-Omri, on the stone tablets exhumed by Layard from the ruins of Nineveh.

**Oneidas**, once a North American Indian tribe inhabiting Central New York. A remnant in Wisconsin are well advanced in civilization.

**O'Neil, Charles**, an American naval officer; born in England in 1842; entered the United States navy as master's mate in 1861; served on the "Cumberland" at the capture of Forts Hatteras and Clark in August, 1861; and in the engagement with the Confederate iron-clad "Merrimac," March 8, 1862; was in both attacks on Fort Fisher; promoted captain, July 21, 1867; became chief of the naval bureau of ordnance in June, 1897; and was promoted rear-admiral, April 22, 1901.





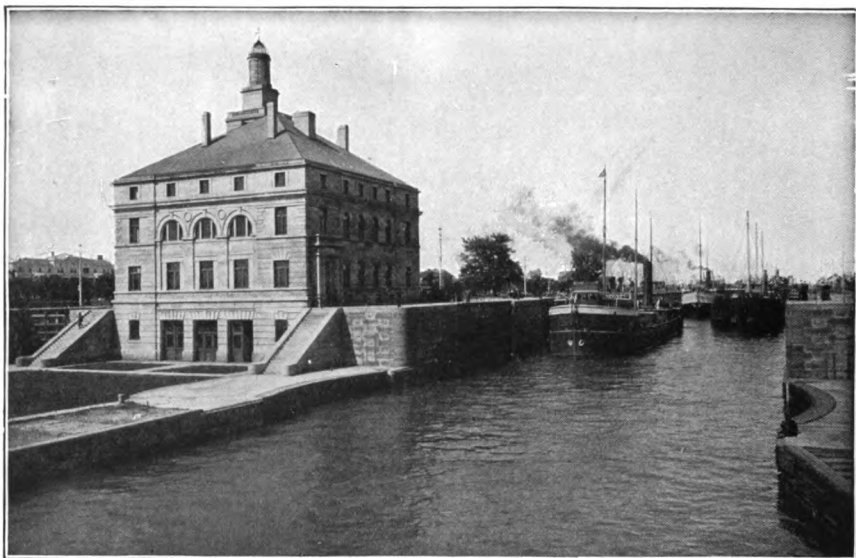
**ONTARIO**  
**Southern Part**

Scale of Miles  
0 10 20 30 40 50 60 70 80

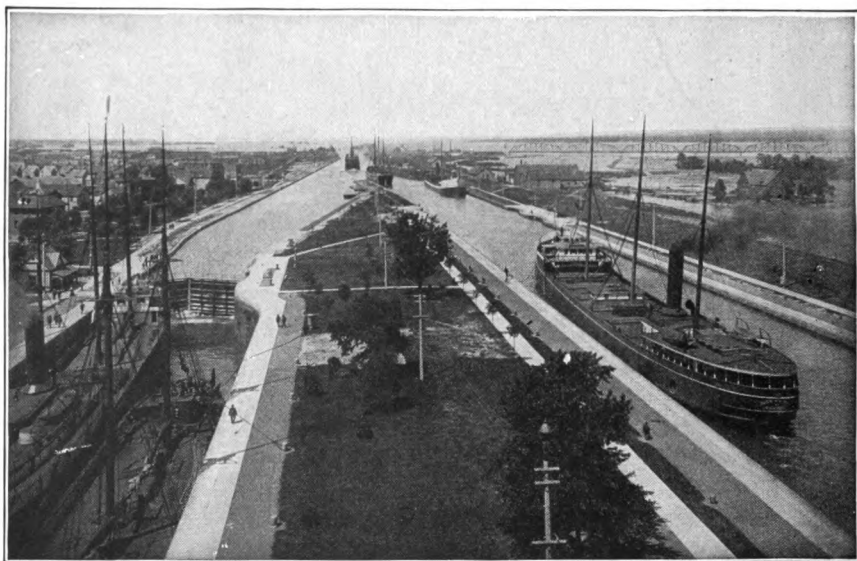
Size of type indicates relative importance of places

**WESTERN PART OF ONTARIO**  
Scale of Miles  
0 10 20 30 40 50 60 70 80





LOCK, SAULT STE. MARIE



GENERAL VIEW OF LOCK

## SAULT STE. MARIE CANAL

**Onion.** The onion, which has a coated bulbous root and large fistular leaves, has been cultivated from a very early age (Num. xi:51). It is generally sown in rich, loamy, and rather moist soil. A variety of it is called the potato, or underground onion. It multiplies in bulbs below the ground. Also various plants of other genera, more or less resembling the common onion.

**Onondagas,** a tribe of North American Indians living chiefly in New York. At one time they laid claim to all the country from Onondaga Lake to Lake Ontario on the N., and to the Susquehanna river on the S. At the close of the Revolutionary War some settled on Grand river, Ontario, and the remainder in New York. The total number at present is about 900.

**Ontario,** a province of the Dominion of Canada (formerly called Upper Canada, or Canada West); bounded on the W. by Manitoba, on the N. by Keewatin and James Bay; on the N. E. and E. by the province of Quebec, on the S. E. by the St. Lawrence, on the S. and S. W. by Lakes Ontario, Erie, Huron, and Superior; area, 407,262 square miles; pop. (1928) 3,271,300; capital, Toronto; pop. (1930 Est.) 621,596. Ottawa, the Dominion capital, is situated in the E. part of the province. The surface is generally low, no elevation exceeding 1,000 feet. The province is crossed by the Laurentian hills. The climate is healthful with extreme cold only in the N. part.

Mining is the principal industry of the province, the minerals including silver, copper, iron, nickel, gypsum, marble, and salt. The province is rich in petroleum, Lambton county being the largest oil-producing district. In 1883 Nickel was discovered in Sudbury, the deposits proving to be the richest on the continent.

The total value of the mineral production for 1929 was estimated at \$117,000,000. Gold led with an output valued at \$33,543,913; nickel second with \$27,115,461; copper, third, \$14,609,178. Ontario supplies nine-tenths of the world's nickel demands. Silver, Portland cement and pig-iron are also produced. In 1928 it was estimated that there were 9,900 manufacturing plants in Ontario, employing

\$2,275,921,056 capital and over 300,000 wage earners; paying \$350,000,000 for wages and \$1,000,000,000 for raw materials and yielding an annual income of \$2,010,484,000.

Farming is an important occupation and most of the soil is of excellent quality. Indian corn, wheat, barley, oats, peas, root crops, potatoes, and tobacco. The tobacco crop is important. Stock raising, dairy farming, and bee culture are among the industries of the province. The fisheries are valuable and large quantities are exported. The area under field crops in 1930 was 13,500,000 acres; chief crop value \$178,445,000.

There is a complete State system of elementary and secondary schools, which is supported generously by State grants and also by local taxation. In 1928 there were 7,928 elementary and 431 secondary schools, with 725,085 pupils and 19,517 teachers. There are four universities, at Toronto, London, Kingston, and Ottawa, the first a State institution, the others are private foundations.

The provincial government is administered by a lieutenant-governor appointed by the governor-general, for five years, assisted by a responsible ministry. There is only one chamber, the Legislative Assembly, which had 112 members, by the apportionment of 1911: on the same basis the province sent 24 senators and 86 representatives to the Dominion Parliament. The government's policy is to encourage the development of provincial resources.

Ontario was first settled by the French. At the close of the American Revolution, many loyalists went to this region from the United States. In 1760 it passed into the hands of the British, who organized the province of Quebec in 1774 and in 1791 divided it into Upper and Lower Canada. These were reunited in 1841, and again separated when the Dominion of Canada was organized in 1867, the W. province becoming the province of Ontario. Several battles of the War of 1812 occurred in this region, including those of the Thames, of Lundy's Lane, etc.

**Ontario, Lake,** the smallest and most E. of the five great lakes of North America, in the St. Lawrence basin, partly belonging to Canada and partly to the State of New York. It

## Onyx

is of an elongated, oval shape, 172 miles in length, by a maximum breadth (in the center) of 60 miles; covering an area of about 5,400 square miles. Its surface level is about 334 feet below that of Lake Erie, and 231 feet above the tide level of the St. Lawrence. Its depth is said to average 490 feet; but in some places it is upwards of 600 feet in depth, and it is navigable throughout its whole extent for vessels of the largest size. Lake Ontario has many good harbors; and as it never freezes, except at the sides, where the water is shallow, its navigation is not interrupted like that of Lake Erie. It is, however, subject to violent storms and heavy swells. It communicates by the Genesee river and Oswego canal with the Erie canal, and with the Hudson river and New York city; the Niagara river and the Welland canal, at its S. W. extremity, unite it with Lake Erie, and the Rideau canal connects it with the Ottawa at Ottawa city. Numerous sailing vessels and steamers of large size navigate the lake.

**Onyx**, a semi-pellucid gem with variously colored zones or veins. Any stone exhibiting layers of two or more colors strongly contrasted is called an onyx.

**Oolite**, in petrology, a variety of limestone, composed of grains, like the roe of a fish, each of which has usually a small fragment of some organism or a grain of a mineral as a nucleus, around which concentric layers of calcareous matter have accumulated. In geology and palæontology, the term is now chiefly chronological, being applied to a considerable portion of the Secondary period and to the strata then deposited. During the Oolitic period the present continents were largely covered by the sea, hot enough to be studded in places with coral reefs and contain certain cephalopods like Ammonites and Belemnites. At intervals muddy sediment so clouded the water as to kill the coral animals. Islands in the sea had a vegetation of cycads, ferns, coniferae, etc. Reptiles abounded, birds had apparently come into being, and also mammals of the marsupial type.

**Opah**, the king fish, a large and beautiful fish, native of the Eastern seas, and weighing from 140 to 150

pounds. It is held sacred by the Japanese, who regard it as the peculiar emblem of happiness.

**Opal**, a precious stone of various colors, which comes under the class of pellucid gems. It consists of silica with about 10 per cent of water, and is very brittle. It is characterized by its iridescent reflection of light.

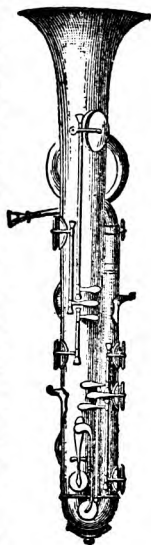
**Opatow**, a small town in the S. of Russian Poland, 17 miles N. W. of Sandomir, on the Opatowka, an affluent of the Vistula, and 33 miles E. of Kielce; is in a fertile plain, whose inhabitants raise and sell superior qualities of grain. Until recently Opatow was known as "the wooden town of Poland," as all of its buildings were constructed of wood. Pop. about 7,500.

**Operti, Albert** (Jasper Ludvig Roccabigliera), an Italian artist; born in Turin, Italy, March 17, 1852; was educated in Great Britain; graduated at the Portsmouth Naval School, England, entered the British naval marine service, but resigned in 1868. He studied art and sculpture; became scenic artist for several New York theaters; made two voyages to the Arctic regions with Lieut. Robt. E. Peary, and took the first casts of North Greenland Eskimos ever made, for the American Museum of Natural History, New York. He painted a number of historical pictures, among them "Farthest North"; "Rescue of the Greely Party," etc.

**Ophicleide**, a wind instrument of metal, invented to supersede the serpent in the orchestra and in military bands.

**Ophidia**, in zoölogy, snakes; an order of the class Reptilia, which is placed by Professor Huxley in his divi-

## Ophidia



OPHICLEIDE.

sion Sauropsida. The body is always cylindrical and without a bony exoskeleton. Hooked conical teeth are always present, anchylosed with the jaw. The order is preëminently tropical.

**Ophir**, an ancient country celebrated for gold. The ships of Solomon and of Hiram, King of Tyre, brought 450 talents of gold to Jerusalem, 1000 B. C. Jehoshaphat built ships at Tarshish to go to Ophir for gold, about 913 B. C. Its position has not been ascertained, and Arabia, India, and Africa are contended for by different authorities. Josephus considers Malacca to be Ophir.

**Opium**, in chemistry, the dried juice obtained from the poppy, extensively cultivated in Asia Minor, Egypt, and India. Opium is a complex substance. In large doses the sleep becomes coma, and death ensues. It is given to allay pain and spasm.

**Opium Traffic.** In China, India, Turkey, and other parts of the East, and, to a small extent, in the West, opium is used as a narcotic drug. The great source whence China has always derived its opium has been India, where, since 1793, the drug has been a government monopoly. The trade, which was conducted in clippers, was contraband, the Chinese government having in 1796 prohibited the importation of opium. In March, 1839, the Chinese authorities enforced the law, forbade all foreigners to quit Canton, and ordered them to deliver up the opium in their possession, which was burnt. War with Great Britain resulted, which ended in the defeat of the Chinese, who were obliged to pay indemnity for the opium. They were compelled to readmit it and the Indian Revenue benefited considerably. In 1906 China made effectual restrictions for eradicating the evil. See CHINA.

**Opodeldoc**, a solution of soap and alcohol, with addition of camphor and volatile oils; used externally against rheumatic pains, sprains, and bruises.

**Oporto**, an important city and seaport of Portugal, on the Douro, 2 miles from its mouth, and 174 miles N. E. of Lisbon. It occupies the site of the ancient Portus Cale, from which the name Portugal is derived, and it was taken and sacked by the

French in 1805. Oporto is the emporium for a large portion of Portugal, and has an extensive commerce. Pop. (1920) 203,981.

**Opossum**, the popular name for the pouched mammals which have a geographical range from the United States to Patagonia. They vary from the size of a mouse to that of a large cat, and have long noses, ears, and (generally) naked prehensile tails. The Virginia opossum, common over all temperate America, is the best-known of the family, and is found even in towns, where it acts as a scavenger by night.

**Oppeln**, a town of Prussian Silesia, on the Oder, 51 miles S. E. of Breslau. It has a church founded in 995, a castle on a river island, important manufactures, and a large trade in grain and cattle. Pop. (1919) 34,600.

**Oppert, Julius**, a French Assyriologist and Orientalist; born of Jewish parents in Hamburg, July 9, 1825; became an expert in deciphering cuneiform inscriptions; works include "History of the Empire of Chaldea and Assyria from the Monuments" (1866), and "The People and Language of the Medes" (1879). He died Aug. 21, 1905.

**Opposition**, in astronomy, the situation of two heavenly bodies when diametrically opposed to each other, or when their longitudes differ by 180°. Thus there is always an opposition of sun and moon at every full moon; also the moon or a planet is said to be in opposition to the sun when it passes the meridian at midnight. See CONJUNCTION.

**Ops**, the Roman female divinity of plenty and fertility. She was regarded as the wife of Saturn, and, accordingly, as the protectress of everything connected with agriculture.

**Optative**, in grammar, that form of the verb in which wish or desire is expressed, existing in the Greek and some other languages, its force being conveyed in English by such circumlocutions as "May I," "would that he," etc.

**Optimism**, the doctrine of those philosophers and divines who hold

that the existing order of things, whatever its seeming imperfections of detail, is nevertheless, as a whole, the most perfect or the best which could have been created, or which it is possible to conceive. Some of its advocates content themselves with maintaining the absolute position, that though God was not by any means under obligation—even to His own perfection of character—to create the most perfect order of things, yet the existing order is *de facto* the best; others contend, in addition, that the perfection and wisdom of Almighty God necessarily require that His creation should be the most perfect which it is possible to conceive.

The philosophical discussions of which this controversy is the development are as old as philosophy itself, and form the groundwork of all the systems, physical as well as moral, whether of the Oriental or of the Greek philosophy; of Dualism, Parsism, and of the Gnosticism and Manichæism which afflicted the Christian Church, in the east; and in the west, of the Ionian, the Eleatic, the Atomistic; no less than of the later and more familiar, Stoic, Peripatetic, and Platonistic Schools.

In the philosophical writings of the fathers, of Origen, Clement of Alexandria, and above all of Augustine, the problem of the seeming mixture of good and evil in the world is the great subject of inquiry, and through all the subtleties of the mediæval schools it continued to hold an important and prominent place.

But the full development of the optimistic theory as a philosophical system was reserved for Leibnitz (q. v.). It forms the subject of his most elaborate work, "*Theodicea*," the main thesis of which is, briefly—that among all the systems which were present to the infinite intelligence of God, as possible, God selected and created, in the existing universe, the best and most perfect, physically as well as morally.

The "*Theodicea*," published 1700, was designed to meet the skeptical theories of Bayle, by showing not only that the existence of evil, moral and physical, is not incompatible with the general perfection of the created uni-

verse, but also that God, as all-wise, all-powerful, and all-perfect, has chosen out of all possible creations the best and most perfect; that had another more perfect creation been present to the divine intelligence, God's wisdom would have required of Him to select it; and that if another, even equally perfect, had been possible, there would not have been any sufficient determining motive for the creation of the present world.

The great argument of the optimists is the following: If the present universe be not the best that is possible, it must be that, (1) God did not know of the (supposed) better universe, or that (2) God was not able to create that better one, or that (3) God was not willing to create it. Now, they continue, every one of these hypotheses is irreconcilable with the attributes of God; the first, with His omniscience; the second, with His omnipotence; the third, with His goodness.

While it is not difficult to accept the conclusion known as optimism, the above argument can scarcely be trusted to prove it, inasmuch as the second of the hypotheses referred to cannot be shown irreconcilable with the omnipotence of God. It is not derogatory to God's omnipotence that it cannot make 2 and 2 equal to 99, since that would be absurd and no proper object of power; and though none may be able to prove that the creation of a better universe is thus beyond proper omnipotence, none can prove that it is properly within the range of omnipotence; and in lack of such proof the argument as above fails.

Optimism does not need such evidence. He who chooses to believe it has right to say that it is *too good not to be true*; and any man has a right to choose to believe the best that he knows or can conceive, in default of proof that that best is absurd or impossible.

**Orache**, a genus of plants, having male and female flowers on the same plant. The species are numerous and widely spread over the maritime or saline parts of the earth, scarcely any species except the common orache being ever found inland or away from saline influence.



**Oracle**, in anthropology, oracles are of high antiquity. They existed among the Egyptians, and the poetry of the Greeks and the Romans is full of allusion to them. The Hebrews might lawfully, by the high priest, consult the Urim and Thummim, but they also illicitly sought responses from teraphim, and from the gods of surrounding nations. The responses were supposed to be given by a supernatural afflatus, either through a person, as at Delphi and Cumæ, or through some object, as in the rustling of the sacred grove at Dodona. But in every case there is present the idea of a power more than human taking possession of a person or thing, and making that person or thing the vehicle of the response.

**Orang Outang**, in zoölogy, the Mias of the Dyaks; also known as the "wild man of the wood." It is a dull, slothful animal, but possessed of great strength. These animals are now confined to the swampy forests of Sumatra and Borneo. Their height has been variously stated, but we have not the least reliable evidence of the existence of orangs in Borneo more than four feet two inches high. The legs are very short, the arms are disproportionately long, reaching to the ankle when the animal is placed in an erect position. The males have a longish beard, and they sometimes develop warty protuberances on each side of the face. The resemblance to man in appearance is greatest in the females and in young animals. The head of a baby orang is not very different from that of an average child; but in the adult the muzzle is as well-marked a feature as in the Carnivora. It never walks erect, unless when supporting itself by branches.

**Orange**, a city in Essex county, N. J.; on the Lackawanna railroad and trolley from Newark; 4 miles N. W. of the latter city; is built on a slope of the Watchung Mountain, near Llewellyn Park and the Eagle Rock and South Mountain County Park reservations; is noted for its scenic attractions, handsome residences, and hat manufactures; and contains a Memorial Hospital, House of the Good Shepherd, public park with Soldiers' monument, and Masonic Temple. Pop. (1928 Est.) 35,140.

**Orangeman**, a member of an association of Irish Protestants. They have passwords and grips, and there is an initiatory ceremony. They became an organized body in 1795, but the system existed much earlier. They claim to do honor to the memory of William III. They are numerous in the United States, and very strong in Canada.

**Orange Free State**, a former Boer republic, later a British colony, and since 1910 a province in the Union of South Africa; area, 50,389 square miles; pop. (1921) 628,827; colored, 439,271; capital, Bloemfontein, pop. 38,865. Being 5,000 feet above the sea-level, the country, chiefly vast undulating plains, is cold in winter, with violent thunder storms and long droughts in summer. Diamonds and other precious stones have been found in paying quantities, rich coal mines exist, and the State is said to abound in other mineral wealth. Gold was discovered in 1887. The Dutch Reformed Church is the dominant religion, and a Dutch dialect the language of the country.

The great discovery of diamonds on the banks of the Vaal river, in May, 1870, led to conflicting claims by the Orange Free State and the Transvaal Republic but in October, 1871, the British annexed the disputed territory. In the summer of 1899, the relations becoming strained between the South African Republic and the British government, the Orange Free State declared its intention of supporting the latter in the event of war. After the defeat of the Boer forces, a military governor was appointed over the Orange Free State. Its annexation to the British empire was formally proclaimed at Bloemfontein, May 28, 1900, when its name was changed to the Orange River Colony. At the Union of 1910 its Boer name was restored. See SOUTH AFRICA, UNION OF.

**Oratorio**, a kind of musical drama, consisting of airs, recitations, duets, trios, choruses, etc. The text is usually derived from some Scriptural subject; as, for instance, that of the "Messiah," the "Creation," and "Elijah."

**Orcagna**, *Andrea*, a corruption of L'Arcagnola, one of the greatest of the early Italian painters; born in

**Florence**, Italy, about 1316; combined in his works the severity and grandeur of Giotto, with the softness and tenderness of Simone and the Lorenzetti. He was great also as a sculptor and architect. He died in Florence, about 1376.

**Orchard**, an inclosure devoted to the culture of fruit trees, especially the apple, the pear, the plum, the peach, and the cherry. The chief fruit-growing States are New York, Ohio, Michigan, Illinois, Pennsylvania, Delaware, New Jersey, Maryland, Indiana and California.

**Orchestra**, or **Orchester**, in Greek and Roman theaters, the semi-circular area, included by the straight line which bounded the stage in front of the first row of the ascending steps. In modern theaters, etc.: (1) The place where the band or band and chorus, are placed in modern concert-rooms, theaters, etc. (2) The collection of instruments of varied compass and quality of tone which constitutes a full band.

**Orchidaceæ**, orchids; the typical order of the alliance Orchidales. It consists of perennial herbs or shrubs, with fibrous, fasciculated, fleshy, or tuberlike roots. All the species are terrestrial in temperate latitudes; in the tropics many are epiphytes, growing on trees. They are remarkable for their irregular flowers, often very beautiful, sometimes very fragrant. Found in nearly all climates. Known genera 400; species 3,000.

**Ord, Edward Otho Cresap**, an American military officer; born in Cumberland, Md., Oct. 18, 1818; was graduated at the United States Military Academy in 1839; served in the Florida war till 1842, and thence until 1861 was on frontier duty. In September of the latter year he was appointed Brigadier-General of volunteers, and commanded a brigade of the Pennsylvania Reserves. Throughout the Civil War he served with distinction; was present at the surrender of Richmond and was later given the Department of the Ohio. In September, 1866, he was mustered out of the volunteer service with the rank of Major-General. In 1866-1880 he was in command of various departments, and was retired in 1881 with the rank

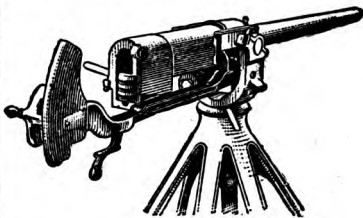
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of Major-General, U. S. A. He died in Havana, July 22, 1883.

**Ordeal**, the *judicium Dei* of mediæval writers; the practice of referring disputed questions to supernatural decision, in the belief that the Deity would work a miracle rather than the innocent should suffer or the guilty escape punishment. As elsewhere noted it was permitted by the laws of England, in the form of judicial combat, until the early part of the nineteenth century.

**Ordeal Tree**, of Guinea, and Madagascar. The fruit, which is poisonous, is given in some kind of broth to the accused person. If he recover, he is deemed innocent; if he die, this is to be held to prove his guilt.

**Ordinance of 1784**. At the close of the American Revolutionary War, it was regarded as unjust that the States having unsettled Western possessions should hold the same solely for their own benefit, and it was agreed that these should be ceded to the general government. In 1784 Jefferson presented to the Continental Congress, at Philadelphia, Virginia's cession of all her territory N. W. of the Ohio, and submitted a plan for the government of that tract and of any other that might be ceded within certain geographical limits. This is known as the Ordinance of 1784.



DRIGGS-SIROEDER 6-POUNDER.

**Ordinance of 1787**. An ordinance for the government of the territory of the United States N. W. of the Ohio river; passed by the last Continental Congress in New York, in 1787. It provided among other things for the immediate abolition of slavery in the territory and for the return of fugitive slaves to their masters.

**Ordination.** The solemn forms which attend the elevation of a candidate to religious rank and authority in any denomination. In the United States Protestant churches have each their own method of ordination, which is rather a service of consecration than a sacrament imparting special power. The ordination in the Episcopal Church is patterned largely after that of the English Episcopal Church. Ordination in the Roman Catholic Church is attended by elaborate ceremonies.

**Ordinance,** military guns of the larger class; artillery; also called rifles, guns, or cannon.

**Ordinance, Department of,** in the United States, a department attached to the War Department, and controlled by a Chief of Ordinance, with a large force of officers and clerks at an annual cost in salaries of \$175,000.

**Ore,** substances found in the earth from which metals are obtained by various processes, but chiefly by roasting and smelting. Generally speaking, however, all mineral substances containing metals, combined or free, are called ores. They are found in veins or lodes, in bedded masses, and also disseminated in rocks of all ages. In the latter, the ores of iron and manganese are the most abundant, and often found in beds of large extent. Some ores, as well as native metals, are also found in alluvial deposits; gold, platinum, etc., in those known as placers. Placer products have been derived from the degradation and wearing away of older rocks, the minerals having been washed out and redeposited by the agency of water. Were it not for the fact that much of the gold and silver bearing ore found in the Rocky Mountains is of too low a grade to work profitably, the product of those metals would have been much greater from many of the Western States, as millions of tons of low grade ores now encumber the dumps of the mines. Edison in 1896 perfected an electrical machine for treating low grade "magnetic" ore.

**Oregon,** a State in the Pacific Division of the North American Union; admitted to the Union, Feb. 14, 1859; capital, Salem; number of counties, 36; area, 96,699 square miles; pop.

Pros 6

(1920) 789,087; (1930) 952,691.

The surface of the State is mountainous, three ranges dividing it from N. to S.; the Coast Range from 10 to 30 miles from the ocean; the Cascade Mountains, from 110 to 150 miles inland; and the Blue Mountains in the E. The Coast Range has an extreme altitude of 4,000 feet, and is covered with dense forests. The Cascade Mountains, a continuation of the Sierra Nevadas, have an extreme height of 7,000 feet, with several peaks rising 2,000 to 5,000 feet higher. Mount Hood reaches an altitude of 11,500 feet, McLoughlin, 11,000 feet; and Jefferson, 10,500 feet. The Cascades are heavily timbered to the snow line. Four transverse ranges connect the Coast Range with the Cascades; the Calpooia, Umpqua, Rouge river and Siskigon Mountains. The Willamette river valley, lying between the Coast Range and Cascade Mountains, and the Columbia river and California spur, is 150 miles long, from 30 to 70 miles wide, and is extremely fertile. Eastern Oregon, embracing two-thirds of the State, is a high table-land, with little rainfall, and sparsely populated. The principal lakes are, Kalamath, Goose, Warner, Salt, Christmas, Albery, Summer, Silver, Henry, and Malheur, Crater Lake in the Cascades, 8,000 feet above sea-level, is the crater of an extinct volcano, and the deepest body of fresh water in America.

The total value of Oregon's mineral output in 1928 was \$6,687,000, the principal products being stone, cement, sand and gravel and clay products. Gold was mined to the value of 245,300 for 17,000 fine ounces and silver to the value of \$18,637 for 36,000 fine ounces.

The soil is of volcanic origin, with alluvial deposits in the valleys, and is extremely purple. In the central and southeast portions of the State the rainfall is very light and farming depends largely upon irrigation. Grapes, prunes and other fruits thrive abundantly, and the wool growing industry is very large. In 1927 the total value of all farm property was estimated at \$709,000,000. The total value of the wheat produced in this State in 1929 was \$25,554,000, hay, \$31,381,000 and oats, \$6,980,000. On Jan. 1, 1930, livestock was estimated as follows: 2,501,000 sheep, 700,000 cattle, 220,000

cows, 195,000 swine, 166,000 horses and 19,000 mules.

The principal industries include railroad cars and shop construction, fish canning, flouring mills, lumber and timber, printing and publishing, shipbuilding, slaughtering, meat packing, and the manufacture of woolen goods.

In 1927 it was reported that there were 1,779 manufacturing plants, employing 57,179 wage earners, paying \$187,771,000 for raw materials, \$75,717,000 for wages, and yielding products of a combined value of \$342,852,000.

In 1928 there were 197,788 pupils enrolled in public, private and parochial elementary and secondary schools. For higher education there were 266 public and private high schools and academies with 44,174 pupils; 14 universities, colleges and professional schools with 10,685 students.

In 1925 it was estimated that there were around 1,200 religious organizations with over one hundred thousand members and property valued at over eight million dollars. The leading denominations were Roman Catholic, Methodist, and Baptist, in the order named.

In 1928 there were 3,416 miles of steam and 548 miles of electric railroads in operation, the former representing five of the great systems.

For the year ending June, 30, 1927, the State's treasury reported a balance of \$3,894,741, and a State debt of \$63,613,610. The assessed value of all taxable property was \$1,110,677,349.

The governor is elected for a term of four years and receives a salary of \$7,500 per annum. Legislative sessions are biennial and limited to 40 days. The Legislature has 30 members in the Senate, and 60 in the House. There are 3 Representatives in Congress.

The name of Oregon was long applied to all the territory claimed by the United States on the Pacific coast, extending from lat. 42° to 54° 40' N. By the treaty of 1846, a boundary line was fixed between Great Britain and the United States at lat. 49°. The discovery of the Columbia river, in 1792, was succeeded by an exploration under

Captains Lewis and Clarke, 1804-1805. In 1808 the Missouri Fur Company established trading-posts in the country; and, in 1811, the American Fur Company founded a settlement at the mouth of the Columbia, and named it Astoria. In 1839, the emigration of Americans commenced overland by way of the South Pass, and the territory continued to receive settlers yearly till 1848, when the California "gold-fever" attracted a large quota of her citizens away. In 1850, however, the land-donation law, passed by Congress, had the effect of registering 8,000 citizens in Oregon, which was formally organized as a Territory, March 3, 1849. On March 2, 1853, Washington Territory was formed out of the N. half of Oregon; Nov. 5, 1857, a State constitution was adopted; and Feb. 14, 1859, the State was admitted into the Union by Act of Congress under the constitution previously ratified. From 1845 till 1855, a desultory warfare was kept up with the Indian aborigines, and a resumption of the same occurred in 1858, and again 1872-1873.

**Oregon, The,** a first-class, twin-screw, steel battleship of the United States navy. In the early part of 1898 the "Oregon" made a memorable journey. She was stationed at San Francisco, on the Pacific Coast, and was ordered to Key West, Florida, to join the North Atlantic Squadron in the West Indies. The distance covered was 13,587 miles and the time consumed, including stoppages to coal, etc., was 66 days. The "Oregon" left San Francisco March 19, before the war with Spain began, and reached Key West on the morning of May 26, where he joined the squadron of Admiral Sampson, and later, took part in the destruction of Admiral Cervera's ships at Santiago de Cuba.

**Oregon, University of,** a coeducational, non-sectarian institution in Eugene, Ore., founded in 1872.

**O'Reilly, John Boyle,** an Irish American poet; born at Dowth Castle, County Meath, Ireland, June 28, 1844. In 1863 he enlisted in the 10th Hus-

sars, in Ireland, for the avowed purpose of spreading revolutionary doctrines among the soldiers. For this he was arrested, tried for treason and sent for 20 years penal servitude in Australia. The following year (1869) he escaped to America, going first to New York and afterward to Boston. In the latter city he found work on "The Pilot" (of which he subsequently became editor and principal owner). He died Aug. 10, 1890.

**Orel**, a central government of Russia, south of the Tula and Kaluga; area, 18,042 square miles; pop. 2,054,749. It is generally a level, elevated plateau, with a soil adaptable for agriculture, the chief industry. The principal rivers are the Oka, the Desna, and the Sosna. Orel, the capital (pop. 69,858) is a busy commercial center.

**Orellana, Francisco de**, a Spanish explorer; born in Truxillo, Spain, about 1490, accompanied Pizarro to Peru in 1531. Ambitious of adventure, he set out to explore the continent of South America, E. from Peru; passed down a branch of the Amazon into that vast river, and thence to the sea; thus being the first European navigator of the Amazon. His accounts of the marvelous country he had crossed induced Charles V. to authorize him to settle colonies there, and he returned for that purpose in 1549, but died soon after his arrival.

**Oresteia**, a Grecian poem relating the history of Orestes, particularly in a dramatic trilogy by Æschylus. Agamemnon returns from Troy and is murdered by Clytemnestra. A chorus sketches the history of the house of Atreus and narrates the sacrifice of Iphigenia. Clytemnestra makes this the justification of her act while Cassandra, a Trojan captive, prophesies the vengeance of Orestes, before she, too, is slain by Clytemnestra.

**Orfila, Mateo Jose Bonaventura**, a French physician of Spanish parentage, and the founder of the science of toxicology; born in Mahon, Minorca, 1787. His "Treaties on Legal Medicine," in four volumes, is the greatest work on medical jurisprudence extant. He died in 1853.

**Origen**, a father of the Church, and one of the most learned ecclesiastical writers; was born in Alexandria, 185 A. D., of Christian parents, who early instructed him in religious knowledge and in the sciences. At the age of 17 he lost his father, who was beheaded for his profession of Christianity. Origen had recourse to the teaching of grammar for the support of himself, his mother, and brothers; but this occupation he relinquished on being appointed catechist, or head of the Christian school of Alexandria. In this situation, he distinguished himself by the austerity of his life. From Alexandria he went to Rome, where he began his famous "Hexapla," an edition of the Hebrew Bible with five Greek versions of it. At the command of his bishop he returned to Alexandria, and was ordained. Soon after this, he began his "Commentaries on the Scriptures." Origen is supposed to have died in Tyre about the year 254.

**Original Sin**, in Protestant theology, sin for which each individual is held to be responsible before he has committed any actual transgression. In Roman theology, original sin is defined to be "that guilt and stain of sin which we inherit from Adam, who was the origin and head of all mankind."

**Orinoco**, one of the great rivers of South America, has its origin on the slopes of the Sierra Parima, in the extreme S. E. of Venezuela; its exact sources were only discovered in 1886 by Chaffanjon. It flows at first W. by N., a mountain-stream. A little below Esmeralda it divides and sends off to the S. an arm, the Cassiquiare, which, after a course of 180 miles, enters the Rio Negro, a tributary of the Amazon. The other branch on reaching San Fernando is met by the strong current of the Guaviare; the united stream then turns due N., and, after passing over the magnificent cataracts of Maypures and Atures, and picking up the Meta on the left, meets the Apure, which likewise strikes it from the left. Below the confluence with the Apure the Orinoco turns E. and traverses the llanos of Venezuela, its waters, with an average breadth of 4 miles, being augmented from the right by the Caura and the Caroni. About 120 miles from the Atlantic,



into which it rolls its milk-white flood, its delta (8,500 square miles) begins. Of the numerous mouths which reach the ocean over 165 miles of coast line only seven are navigable. The waterway principally used by ocean-going vessels, which penetrate up to Ciudad Bolivar (Angostura), a distance of 245 miles, is the Boca de Navios, varying in width from  $3\frac{3}{4}$  to 23 miles. The total length of the river is some 1,550 miles, of which 900, up to the cataracts of Atures, are navigable, besides a farther stretch of 500 miles above the cataracts of Maypures; area of drainage basin, 368,600 square miles. Most of the larger affluents are also navigable for considerable distances.

**Oriole**, a well-known American bird, of which there are varieties in Europe, Asia, and Africa.



ORIOLE.

**Orion**, in mythology, a celebrated Greek giant and hero. In astronomy, one of the ancient constellations found by Ptolemy. The equinoctial passes nearly through its center, and it is situated in the Southern Hemisphere with respect to the ecliptic.

**Orissa and Bihar**, a province of Hindustan on the Bay of Bengal, constituted April 1, 1912, out of Bengal; embraces the three great sub-provinces of Bihar, Orissa, and Chota Nagpur; area, over 83,000 square miles; pop. (1925 Est.) 3,959,669, mainly Hindus.

**Orkney Islands**, a group of 90 Scotch islands, islets, and skerries, of which only 28 are inhabited, and

which have an aggregate area of 376 square miles, the largest being Pomona or Mainland, Hoy, Sanday, Westray, South Ronaldshay, Rousay, Stronsay, Eday, Shapinsay, etc. Pop. (1927 Est.) 22,400.

**Orleans**, a city of France, formerly of the department of the Loiret; on the Loire; 68 miles S. W. of Paris. In 1426 the city sustained a siege against the English, and was relieved by Joan of Arc, whose statue stands in a public square. Pop. (1921) 69,048.

**Orleans**, a French royal family, two houses of which have occupied the throne of France. (1) On the death of Charles VIII. without issue in 1498, Louis, duke of Orleans, great-grandson of their common ancestor Charles V., as the nearest heir, ascended the throne under the title of Louis XII. Henry III. (died 1589) was the last sovereign of this house, or the Valois-Orleans branch. (2) The house of Bourbon-Orleans is descended from Philip, duke of Orleans, son of Louis XIII., and younger brother of Louis XIV.

**Orleans, Louis Albert Philippe**, Count of Paris. See PARIS.

**Orleans, Louis Philippe Joseph, Duke of**, a great-grandson of the French regent Philippe, Duke of Orleans; born in St. Cloud, France, April 13, 1747; married in 1769 the daughter of the Duke of Penthièvre. His opposition to the court began in 1771, and he became the rallying point of its enemies. In 1787 he was exiled for the part he took in the Assembly of Notables; in 1789 he was one of the nobles who joined the Tiers Etat (Third Estate); in 1792 he went over to the revolutionary party without reserve, took the name of Philippe Egalite ("Philip Equality"), and voted for the death of Louis XVI. It did not save him from being arrested as a Bourbon, condemned and beheaded, in Paris, Nov. 6, 1793.

**Orleans, Louis Philippe Robert, Duke of**; born in Twickenham, England, Feb. 6, 1869; son of the Count of Paris, and heir to the non-existent French throne; was educated in France, but banished with the other princes in 1886. In 1890 he returned and demanded the right of enlisting in the army, but was again imprisoned

and banished. On the death of his father in 1894, he became the head of the royal house.

**Orloff**, a celebrated Russian family, founded under Peter the Great by Ivan Orel, one of the Strelitz who, when that body was destroyed, saved his life by his cool courage, and became an officer and a noble. The most celebrated of his descendants were: Gregory, a Russian general and political intriguer, who greatly promoted the elevation of his mistress, Catherine II., to the throne. Being disappointed in his hope of sharing the crown with her, and declining a private marriage, he was supplanted by a new favorite, and died insane in 1783. He had one son by the empress, named Bobrinski. Alexis, his brother, and fellow conspirator, was a man of gigantic stature and strength, and is said to have strangled the Emperor Peter with his own hands. He was a favorite of Catherine, and was married to the Princess Tarakanoff, daughter of the Empress Elizabeth; died in 1808. The Orloffs remained prominent in Russia until the governmental revolution and overthrow of the imperial family in 1917.

**Ormerod, Eleanore A.**, an English entomologist; born in Sidburg, England, in 1828. She began her contributions to the science of entomology in 1868; was appointed consulting entomologist of the Royal Agricultural Society, and shortly afterward became special lecturer on economic entomology at the Royal Agricultural College at Cirencester. Her writings consist principally of papers on different injurious insects of England, South Africa, and Australia, and her "Manual of Injurious Insects" (1881) and "Guide to Methods of Insect Life" are standards the world over. She died July 19, 1901.

**Ornithology** is an inexact term usually meaning just bird-study. Birds are theoretically conceded to have evolved from reptilian ancestors. The oldest known fossil bird was found in the Jurassic rocks of Germany. It had the conical teeth of reptiles which since have been eliminated, mastication being done by a tough muscular organ called the gizzard. The bird eats stones et cetera and by the contractions of the walls of the gizzard the food is

ground up. Birds, however, retain scaly feet and never more than four claws as heritage of their reptilian ancestry. Also it might be mentioned that birds still lay eggs the same as reptiles, but instead of being cold-blooded have a body temperature of about 104 F. enabling them to be even more active than the warm-blooded mammals. The feathers are believed to have evolved from scales.

Not all birds fly, but the fore limbs are so modified, that what corresponds to our wrists, hands and fingers has been ossified into practically one bone. In like manner the lower limbs have changed until the bird literally walks on its toes holding its heel high in the air.

The beaks and feet of birds show most modification. Birds of prey have talons with which they catch, hold, and tear their prey; swimming birds have webs between their toes, while the perching birds have feet for that purpose. The beaks, while devoid of teeth, sometimes have pointed ends which serve as spears in case of attack. Other birds have hooked beaks for tearing flesh, while still others have flat beaks with strainers around the edges to strain their food out of the water.

Some birds such as the parrot and starling are able to imitate the human voice, others by skillful manipulation of their wings are able to soar for hours without flapping their wings. Still others migrate covering thousands of miles without losing their way and certain species return yearly to their old nests. The ability of birds to migrate so successfully is attributed to their remarkable eyes, which are the best known in Nature, and their memory of land marks. The older birds lead the way and the young ones remember the scenery.

Most birds, the dove and the ostrich excepted, generally mate for a year at a time, and often rear several families during a season. In some cases the family burden is equally divided between the male and female, while with other species other arrangements are made.

The females as a rule are dull colored for protection while the males are brilliantly attired in order to find favor with the females; and especially

are their feathers brightly colored during the mating season. The best known examples of this are the peacocks and the birds of paradise. In certain other species, such as prairie chickens, all the males of a certain area gather and do a sort of strut dance before the females during the mating season. Apparently the females choose their partners from the excellence here displayed.

Another interesting species is the hornbill who locks his mate up in an old hollow tree, and holds her prisoner until the family is well along. This peculiarity was attributed by some to the jealousy of the male, but most likely it is done to protect the family against predatory birds.

Recently in the New York Zoological Gardens experiments were made to determine the output of heat, that is, the heat generated by birds. As stated above the body temperature is about 104 degrees Fahrenheit. A temperature of 103 is necessary to incubate eggs. In the experiment, the birds were placed in a special apparatus, and the heat generated was measured over a period of several hours. The Cassowary weighing 39 pounds gave off one third as much heat as a man weighing 160 pounds, while the smallest bird tested, the Great-Horned Owl weighing three pounds gave off almost as much heat as a new born baby weighing from 6 to 9 pounds. From this it is readily seen why Nature gave birds such a marvelous insulator in feathers. Even a tiny snow-bird must maintain a body temperature of 104 degrees, while less than half an inch away it may be 40 degrees below zero.

It was observed that in most cases fasting retarded heat production very much, although Nature has adapted most animals to an irregular food supply; many being able to go for weeks without eating. During these periods of famine they live on a reserve which is quickly built up again as soon as food becomes plentiful.

**Ornithorhynchus**, commonly called duckbill or watermole, a small quadruped found in Australia and Tasmania. See DUCKBILL.

**Orontes**, a river of Syria, rising on the east of the Anti-Libanus, and entering the Mediterranean; entire course about 200 miles. It is not navigable.

**Orphan Asylum, or Orphanage**, an establishment in which orphans are provided for and educated. In all well regulated states the duty of taking care of destitute orphans was recognized at an early age, and it appears that the cities of Thebes, Athens, and Rome had establishments in which orphaned, deserted, and illegitimate children were supported and educated at the public expense. In the Middle Ages such asylums were numerous and generally under the direction of the clergy. In recent times public orphanages have been substituted or supplemented by the farming out system, that is, the children are brought up in private families willing to undertake their charge. Orphan asylums, as conducted in the United States, are supported as private institutions, assisted by legislative appropriation. They are fostered also by the religious denominations.

**Orpheus**, in Greek mythology, a celebrated mythic bard. Together with his brother Linus he was regarded as having introduced the arts of civilized life among wild and untutored hordes, and by the power of song to have charmed savage beasts, and to have awakened even inanimate nature into life and rapture.

**Orr, Hugh**, a Scotch-American inventor; born in Lochwinnoch, Scotland, Jan. 13, 1717; came to America in 1737, and settled in Bridgewater, Mass., where he built a factory for the manufacture of scythes and axes, and set up the first trip-hammer in that section. In 1753 he invented a machine for dressing flax. He was an ardent patriot in the Revolutionary War and erected a foundry where he cast cannon and shot for the army. He died in Bridgewater, Mass., Dec. 6, 1798.

**Orris Root**, the rhizome of *Iris florentina* and *I. germanica*, sometimes called violet-scented orris root.

**Orsini**, one of the most illustrious and powerful families of Italy. It became known about the 11th century, and had already acquired high rank and extensive possessions in the Papal States when one of its members, Giovanni Gaetano, was raised to the pontificate under the title of Nicholas III. (1277-1280). The feud between

the Orsini and Colonna families is celebrated in history; it commenced toward the close of the 13th century, and is distinguished for bitterness, unscrupulousness, and violence, assassination being not infrequently resorted to. Vincenzo Marco Orsini (Benedict XIII.) succeeded Innocent XIII. as Pope in 1724.

**Orsini, Felice**, an Italian revolutionist; born in Meldda, Italy, in 1819. In 1838 he was sent to study law at the University of Bologna, and joined the Society of Young Italy, formed in 1831 by Mazzini. In 1843 he took an active part in an insurrection, and being apprehended along with his father, also an ardent patriot, was sentenced to the galleys for life. By the amnesty of July 16, 1846, he obtained his freedom, but soon after he again engaged in intrigues under Mazzini, and took prominent parts in the stirring events of the following years. In 1855 he was condemned to death, but the sentence was not carried out, and in 1856 he escaped to London. He planned the assassination of Napoleon III., in concert with three Italian refugees, Rudio, Gomez, and Pieri. The attempt was made on Jan. 14, 1858, but was unsuccessful. Pieri and Orsini were executed March 13, 1858.

**Orthodox**, holding the right or true faith; sound in opinion or doctrine; especially in religious opinions or doctrines; opposed to heterodox and heretical.

**Orthoepy**, the art of uttering words correctly; correct speech or pronunciation.

**Orthography**, the art, practice, or habit of spelling words correctly according to the recognized usage. Also that part of grammar which deals with the nature and properties of letters, and with the proper representation by letters of the words of a spoken language.

**Ortolan**, a bird, native of continental Europe and Western Asia, migrating S. in winter, returning about the end of April or May.

**Orton, James**, an American clergyman, naturalist, and traveler; born in Seneca Falls, N. Y., April 21, 1830. He conducted exploring expeditions to South America. He died on Lake Titicaca, Peru, Sept. 25, 1877.

**Orton, Jason Rockwood**, an American poet and miscellaneous writer; born in Hamilton, N. Y., in 1806; educated as a physician, but abandoned the practice of medicine in 1850, and devoted himself to literature. He died in Brooklyn, N. Y., Feb. 13, 1867.

**Osage Orange**, a tree native of North America; attains a height varying, according to soil and situation, from 20 to 60 feet. It is of the same genus with fustic, and its wood, which is bright yellow, probably might be used for dyeing. The wood is fine grained and very elastic, and takes a high polish; it is much used for fence-posts, sleepers, paving-blocks, etc. The tree is largely employed in the United States, especially in the West, as a hedge plant. Its fruit is about the size of a large orange, has a tuberculated surface of a golden color, and is filled internally with radiating, somewhat woody fibres, and with a yellow milky juice, the odor of which is generally disliked, so that the fruit is never eaten.

**Osages**, a tribe of North American Indians, about 1,500 in number, living on a reservation in the N. part of Oklahoma. It is said to be the richest community in the world. They own nearly 1,500,000 acres of land, worth not less than \$50 an acre. Each Osage Indian, man, woman and child, is worth at least \$15,000, and each family on a division would possess on an average \$60,000. The property is held and owned in common, and all their industries are nationalized.

**Osaka or Ozaka**, the second largest city of Japan, at the head of the gulf of the same name, and at the mouth of the Yodo river, which issues from Lake Biwa. The city covers an area of about 8 square miles and is intersected with canals. Its fine castle, the stones of whose walls are of astonishing size, was constructed in 1583, and the palace, built afterward in its precincts and destroyed in 1868, was the most magnificent structure in Japan. Pop. (1922) 1,252,983.

**Osborn, Bradley S.**, an American naval officer; born in Rye, N. Y., Aug. 16, 1828; educated in New York and Connecticut; went to sea when 10 years old; served as coxswain in the Chinese navy, as commander in the Argentine, as admiral in the Mexican,

and as signal officer in the United States navy during the Civil War. During the Spanish-American War he was a volunteer naval scout, and was the first to discover Cervera's fleet off the island of Curacao. In 1900 he was flag officer commanding the United States Veteran Navy, with rank of commodore. He died May 6, 1912.

**Osborn, Henry Stafford**, an American educator; born in Philadelphia, Pa., Aug. 17, 1823; was graduated at the University of Pennsylvania in 1841, and at the Union Theological Seminary in 1846. He held several pastorates; was Professor of Mining and Metallurgy in Lafayette College in 1866-1870; then held the same chair in Miami University till 1873, when he devoted himself to elaborating his surveys of noted places in Biblical history, and preparing a set of maps of the Holy Land that have become standards. He died in New York city, Feb. 2, 1894.

**Osborn, Thomas Ogden**, an American soldier and diplomatist; born in Jersey, O., in 1832; was graduated at the Ohio State University in 1854; read law with Gen. Lew Wallace, and began practice in Chicago, Ill., in 1859. He recruited and became colonel of the 39th Illinois Volunteers; was appointed to command four regiments in the attack on Fort Sumter; and was commissioned a Major-General of volunteers. After the war he resumed practice; was elected treasurer of Cook co., Ill., appointed a manager of the National Soldiers' Home; was a member of the commission to settle disputed claims between the United States and Mexico; and was minister to the Argentine Republic in 1873-1885. He died Mar. 27, 1904.

**Osborne (Samuel), Duffield**, an American novelist; born on Long Island, N. Y., in 1858.

**Oscar I., Joseph Francois Bernadotte**, King of Sweden and Norway, son of Bernadotte (Charles XIV.); born in Paris, France, July 4, 1799. In 1823 he married Josephine, eldest daughter of Prince Eugene Beauharnais. During the reign of his father he was three times viceroy of Norway. He acceded to the throne in 1844. He took little part in foreign politics. He resigned in favor of his

eldest son in 1857. He died July 8, 1859.

**Oscar II.**, King of Sweden and Norway; born Jan. 21, 1829; was a grandson of Napoleon I.'s famous general, Marshal Bernadotte, king of Sweden and the first king of the new independent kingdom of Norway. He ascended the throne in 1872, in succession to his brother, Charles XV. He died December 8, 1907, and was succeeded by his son Gustavus V.

**Osceola**, a chief of the Seminole Indians; born in Florida about 1813; was the son of an Indian trader called Powell. In 1835, while on a visit to Fort King, his wife was claimed as a slave, as being the daughter of a fugitive slave woman, and carried off as such. Osceola resolved upon vengeance, and some months afterward, finding General Thompson outside of the fort, killed him and six other whites in his company, Dec. 28, 1835. On Oct. 23, 1837, while conferring with General Jessup, he was seized and confined till his death, in 1838.

**Oshkosh**, city and capital of Winnebago county, Wis.; on Lake Winnebago, the Fox river, and several railroads; 49 miles S. W. of Green Bay, is in a lumber, grain, and vegetable section, with many saw and planing mills; offers attractions to tourists and sportsmen on the Fox river and Winnebago and Butte des Morts lakes; and contains a Federal Building, State Normal School, Asylum for the Insane, County Hospital for Incurable Insane and school for Deaf and Dumb. Pop. (1930) 40,108.

**Osiander, Andreas**, a German reformer; born in Gunzenhausen, near Nuremberg, Dec. 19, 1498. Educated at Ingolstadt, he declared himself an adherent of Luther, and became a preacher at Nuremberg (1522), persuaded that city to declare itself Lutheran, took part in the conference at Marburg (1529), and was present at the diet of Augsburg (1530), and at the signing of the Schmalkald articles (1537). In 1548 he was deprived of his office as preacher, but was immediately afterward invited by Albert, Duke of Prussia, to become Professor of Theology in the newly established University of Konigsberg. He was hardly settled there when he became



entangled in theological strife. Osiander's death in the midst of this fierce polemical war, Oct. 17, 1552, did not check it; the battle was continued by his followers. Osiander's son Lukas (1534-1604) and his grandson Lukas (1571-1638) won reputations as theologians.

**Osier**, a willow. Cultivated in beds, its long pliable shoots being used for wicker-work basket making. The purple osier is wild on river banks and cultivated in osier beds.

**Osiris**, in Egyptian mythology, one of the chief Egyptian divinities, the brother and husband of Isis, and, together with her, the greatest benefactor of Egypt, into which he introduced a knowledge of religion, laws and the arts and sciences. His principal office, as an Egyptian deity, was to judge the dead, and to rule over that kingdom into which the souls of the good were admitted to eternal felicity. He was that attribute of the deity which signified divine goodness.

Osiris appears in the hieroglyphic texts as early as the 4th dynasty, and is expressed by a throne and eye; at a later period, that of the 19th dynasty, a palanquin is substituted for a throne; and under the Romans, the pupil of the eye for the eye itself. Osiris does not indeed appear to have been universally honored till the time of the 11th and 12th dynasties, or about B. C. 1800, when Abydos, reputed his burial-place, rose into importance. In the monuments of this age he is called great god, eternal ruler, dwelling in the west, and lord of Abut or Abydos. At the time of the 18th dynasty, this title of Osiris was prefixed to individual names, and continued to be so until the time of the Romans and fall of paganism.

In the Ritual, and other inscriptions, Osiris is said to be son of Seb or Saturn, and born of Nu or Rhea; to be father of Horus by Isis, of Anubis, and of the four genii of the dead. Many mystic notions were connected with Osiris; he was sometimes thought to be son of Ra the Sun, or of Atum the setting Sun, and the Bennu or Phoenix; also to be uncreated, or self-engendered, and he is identified in some instances with the Sun

or the Creator, and the Pluto or Judge of Hades.

**Osler, William**, Anglo-American physician, professor-lecturer, and author; b. Tecumseh, Ont., Canada, July 12, 1849. He graduated in medicine at McGill Univ., Montreal, 1872; studied in Europe; was Prof. of the Institutes of Medicine at McGill Univ. 1874-84; Prof. of Clinical Medicine, Univ. of Pennsylvania, 1884-89; Prof. of Medicine, Johns Hopkins Univ., 1889 to 1904; since, Regius Prof. of Medicine, Univ. of Oxford, England. One of the foremost living diagnosticians, his lectures and writings are standard authorities. His much discussed statement that "man's best (preparatory) work is done before forty" is still thoughtlessly and injuriously perverted. Died, 1919.

**Osman Pasha**, a Turkish general; born in Tokat, Asiatic Turkey, in 1832; entered the Turkish army in 1853; fought with distinction in the Crimean War, the Syrian rebellion, and the Crete campaign, but his great achievement was the defense of Plevna during the Russo-Turkish War (1877). Afterward he held the office of war minister and several other high posts. In 1885 he was appointed grand marshal of the palace, and in 1897, Commander-in-Chief of the Turkish army in Thessaly. He died in Constantinople, Turkey, April 4, 1900.

**Osprey**, or **Ospray**, the fish hawk, bald buzzard, or fishing eagle. A bird of prey, of almost world wide distribution, subsisting on fish. Ospreys nest usually near the seashore, and, unlike rapacious birds generally, are in some measure gregarious. In North America large communities of ospreys are found, and the purple grackle often builds close by. The osprey lays three or four eggs of a rich red to buffy white, with large reddish and brown markings.

**Ossian**, a mythical Gaelic hero and bard, is said to have lived in the 3d century, and to have been the son of Fingal, a Caledonian hero, whom he accompanied in various military expeditions. In 1760-63 James Macpherson published two epics, which he claimed to be translations from Ossian's poems. The general opinion is

that McPherson interpreted the spirit, rather than the language of the bard.

**Ossining** (formerly SING SING), a village in Westchester county, N. Y.; on the Hudson river and the New York Central & Hudson River railroad; 30 miles N. of New York; occupies an elevated, picturesque site; contains many handsome residences of New York business men; has several high grade private academies; and under its former name is noted as the site of the New York State Prison. Pop. (1930) 15,241.

**Ossoli, Marchioness d', Sarah Margaret Fuller**, best known as Margaret Fuller, an American writer; born in Cambridgeport, Mass., May 23, 1810. In 1846, at Rome, she married the Marquis d'Ossoli. The pair were on their way to New York when their ship was wrecked and both were lost, July 19, 1850.

**Ostend**, a fashionable watering place in the Belgian province of West Flanders, at almost the central point of the 42 miles of seacoast that belongs to Belgium, and 77 miles N. W. of Brussels, with which it is in direct railroad communication, as well as with Cologne and Berlin. In the Middle Ages it was strongly fortified, but in 1865 the last vestiges of its ramparts were removed. Since then a new town has been created, in which a solid granite digue, or parade, over two miles long, a casino, royal chalet, and a race course are features. Ostend dates from 1076; it underwent a siege by Spaniards from July 7, 1601, to Sept. 20, 1604; surrendered to the Allies in 1706, and to the French in 1745; and was occupied and partially destroyed by the Germans, Oct. 15, 1914. Pop. (1921) 48,073.

**Ostend Manifesto, The**, in United States history, a dispatch forwarded to the United States Government in 1854 by its ministers at the courts of Great Britain, France, and Spain, who had met in the city of Ostend, by the Government's request, to discuss the Cuban question. The dispatch declared that, if Spain would not sell Cuba, self-preservation required the United States to take the island by force, and prevent it from

being Africanized like Haiti. Nothing, however, came of the "Manifesto."

**Osteopathy**, a system of healing. In spite of the apparent etymology of the name, the system does not confine itself to the treatment of bone diseases, but claims to be a general system founded on the principle that "all bodily disorders are the result of mechanical obstruction to the free circulation of vital fluids and forces." No medicine whatever is used and no surgery employed, except in cases where the latter is needed exclusively. Despite considerable opposition many of the States have formally recognized the system, which has eight colleges in the United States, over 9,000 practitioners there and in Canada, and a strong National association.

**Osterhaus, Peter Joseph**, an American military officer; born in Coblenz, Germany, about 1820; emigrated to the United States, and was made a major of Missouri volunteers early in the Civil War; commanded a brigade under Fremont, and a division in the battle of Missionary Ridge. He was promoted to Major-General of volunteers in 1864. After the war he was appointed United States consul at Lyons, France, and finally returned to Germany. He died in 1917.

**Ostrich**, the largest of all living birds, standing from six to eight feet in height, and has been known from remote antiquity; Xenophon mentions it in the "Anabasis" as found in the plains of Artemisia, and there are frequent references to it in later Roman literature. Hunters report that the flesh is palatable. The ostrich is hunted and bred for the sake of the quill feathers of the wings and tail, now used by ladies, though formerly ostrich plumes decked the helmets of knights, still later the hats of the cavaliers, and the fashion came in again for a time at the Restoration. The ostrich is a vegetable feeder, but swallows stones, bits of iron, and other hard substances to aid the gizzard in its functions. On ostrich farms newly hatched birds have been observed to pick up little stones before taking any food. The wings are useless for flight, but of so much assistance in running that the bird can outstrip the fleetest

horse. Ostriches are polygamous, the hens lay their eggs in a common nest—a hole scratched in the sand, and the cockbird relieves the hens in the task of incubation, which is aided by the heat of the sun.

**Ostrolenka**, a town of Russian Poland, on the left bank of the Narew river, 25 miles from the Prussian border, 58 miles N. W. of Warsaw. Though situated in a marshy region it has shown a healthful rate of increase in population in the two last decades, and is in most respects a modern town, with extensive manufactures of cloth. In 1806 the French defeated the Russians here with heavy loss, and in 1831 the Russians and Poles had a violent encounter. Pop. about 10,000, largely Jews.

**Oswald, Felix Leopold**, an American naturalist; born in Namur, Belgium, Dec. 6, 1845; graduated at Liege in 1864, and became a physician; but later devoted himself to natural history. He died in 1906.

**Oswego**, city and capital of Oswego county, N. Y., on Lake Ontario, Oswego river and canal, and the New York Central & Hudson River railroad; 36 miles N. of Syracuse; has very large starch, oil, match, engine, and boiler works; supplied with power from the falls (35 feet) of the river; contains a Federal Building, State Normal School, Gerritt Smith Library and in the suburbs, Fort Ontario (1755). Pop. (1930) 22,652.

**Oswego Tea**, a name given to several species of herbs, natives of North America, because of the occasional use of an infusion of the dried leaves as a beverage.

**Othman**, or **Osman**, founder of the Ottoman empire; born in 1259; one of the emirs, who, on the destruction of the empire of the Seljukides, became independent chiefs. Joined by other emirs, he invaded the Eastern Empire in 1299, and made himself master of Nicæa, Iconium, and other towns. He took no other title than Emir, but ruled with absolute power, not without justice and moderation. He died at a great age in 1326.

**Othman, Ibn-offan**, son-in-law of Mohammed; born about 574; murdered in 656.

**Otho I.**, Emperor of Germany, called The Great; born in 923; was the eldest son of Henry the Fowler, and crowned King of Germany in 936, at the age of 14. He carried on war with the Huns, and drove them from the West; made Bohemia his tributary; defeated the Danes, and invaded Bohemia. He then engaged for 10 years in war with the Hungarians, and finally defeated them, Berenger having usurped the title of Emperor of Italy, Otho entered Rome, where he was crowned Emperor by John XII. That pontiff afterward leagued with Berenger, on which Otho caused him to be deposed, and put Leo VIII. in his place, in 963. On the emperor's return to Germany, the Romans revolted and imprisoned Leo; for which Otho again visited Rome, which he besieged and restored Leo. He next turned his arms against Nicephorus, Emperor of the East, whose army he defeated. John Zimisces, the successor of Nicephorus, made peace with Otho, who died in 973.

**Otho, King of Greece**, 2d son of Louis I., King of Bavaria; born in Salzburg, July 1, 1815. At 17 years of age he was invited by the Greeks to become their monarch, and Otho was accordingly declared King of Greece in January, 1833, and, in June, 1835, on his attaining the age of 20, he assumed the reins of government. After a stormy and inglorious reign of 30 years, Otho abdicated the throne, Oct. 20, 1862, and fled the country. He died in Bamberg, Bavaria, July 26, 1867.

**Otho, Marcius Salvius**, a Roman emperor; born in Rome A. D. 32. After Nero's death, he attached himself to Galba, but that emperor having adopted Piso as his heir, Otho excited an insurrection, murdered Galba and Piso, and ascended the throne in 69. He was opposed by Vitellius, who was supported by the German army, and in a battle between the two rivals near Bedriacum, Otho was defeated, on which he slew himself, after reigning three months.

**Otis, Elisha Graves**, an American inventor; born in Halifax, Vt., Aug. 3, 1811. He died in Yonkers, N. Y., April 8, 1861.

**Otis, Elwell Stephen**, an American military officer; born in Freder-

ick, Md., March 25, 1838; was graduated at Rochester (N. Y.) University in 1858, and began the study of law. He was just entering on practice when the Civil War broke out, and in September, 1862, he entered the volunteer service as captain in the 140th New York Infantry. He served through the Civil War. He was discharged from the volunteer service Jan. 24, 1865, with the brevet rank of Brigadier-General. In 1866 he was appointed lieutenant-colonel of the 22d United States Infantry, and became colonel of the 20th Infantry in 1880. From 1867 to 1881 he served with the army in the West against the Indians. In 1881 he organized the School of Infantry and Cavalry at Fort Leavenworth, Kan., of which he remained in command till 1885. He then went with his regiment, the 20th Infantry, to Fort Assiniboine, Mont., where he was commander of the post. On Oct. 1, 1890, he was detailed for duty as superintendent of the recruiting service, and Nov. 28, 1893, he was promoted to the full rank of Brigadier-General. On Dec. 1 of the same year he was assigned to the command of the Department of the Columbia, with headquarters at Vancouver, and in 1897 was transferred to the Department of Colorado. On May 28, 1898, he was appointed Major-General of volunteers and assigned to duty in command of the Department of the Pacific, and as military governor of the Philippines, which office he held till May 5, 1900. He was a member of the Philippine commission, and was promoted Major-General, U. S. A., and assigned to the Department of the Lakes in 1900. Died Oct. 21, 1909.

**Otis, Harrison Gray**, an American statesman, son of James; born in Boston, Mass., Oct. 8, 1765; was member of Congress, 1797-1801, and United States Senator, 1817-1822. He was prominent in the Massachusetts Legislature; took an active part in the Hartford Convention of 1814; and was mayor of Boston in 1829. He died in Boston, Oct. 28, 1848.

**Otis, James**, an American statesman; born in West Barnstable, Mass., Feb. 5, 1725. Through his efforts the Stamp Act Congress was assembled in 1765. He was the author of a num-

ber of political essays and orations. He died in Andover, Mass., May 23, 1783. He had a leading part in animating the American people to a defence of their liberties.

**Otomis**, a tribe of Mexican Indians, and one of the oldest nations in the mountainous regions of the plateau. They were agriculturists and had some knowledge of the manufacture of cloth and ornaments of gold and copper. During the siege of Mexico they came to the assistance of Cortez (in 1521), and have ever since been nominally in subjection to the whites. They accepted the Catholic faith, but have made little progress in civilization. Their descendants are scattered throughout Central Mexico and number some 200,000.

**Ottawa**, a city, county seat of Carleton co., Ontario, and capital of the Dominion of Canada; at the confluence of the Ottawa and Rideau rivers on the Rideau canal, and on the Canadian Atlantic, the Canadian Pacific, and other railroads; 126 miles W. of Montreal. The city is built on a succession of bluffs, rising from the river, and culminating in Parliament Hill, upon which stand the government buildings.

The scenery around the city is exceedingly attractive, and is hardly surpassed by that of any other city in Canada. A suspension bridge over the Chaudiere Falls connects the provinces of Ontario and Quebec. The government buildings are imposing structures, of Gothic architecture, costing about \$4,000,000. They are built around a quadrangle, and with the grounds belonging to them occupy about 30 acres. They are constructed of a light-colored sandstone.

Ottawa was founded by Colonel By in 1827, and in his honor was named Bytown. In 1854 it received its present name and was incorporated as a city. Four years later Queen Victoria selected it as the capital of Canada. The cornerstone of the government buildings was laid by the Prince of Wales, now King Edward VII., in September, 1860. A terrific fire swept the city on April 28, 1900, destroying nearly \$20,000,000 worth of property and rendering 12,000 persons homeless. Pop. (1891) 44,154; (1901) 59,902; (1930 Est.) 127,332.

**Ottawa University**, a coeducational institution in Ottawa, Kan.; founded in 1865 under the auspices of the Baptist Church.

**Otter**, an aquatic fur-bearing, carnivorous mammal; its total length averages about 40 inches, of which the tail constitutes rather more than a third. The fur is of soft, brown color, lighter on throat and breast, and consists of long, coarse, shining hairs, with a short under fur of fine texture. The otter lives exclusively on fish, and is therefore rarely met with far from water.

He was reluctant to separate formally from the German Reformed Church, but took that step in 1800, when along with Rev. Martin Boehm, a Mennonite, and long his associate in revival work, he was ordained bishop of the new society. He died Nov. 17, 1813.

**Ouida**, pseudonym of the novelist Louise de la Ramée; born about 1840; spent part of her girlhood with her mother at Bury St. Edmunds. About 1874 she was living in London at the Langham, and afterward Florence was her chief abode. Has written many novels. Died Jan. 25, 1908.



OTTAWA MAIN PARLIAMENT BUILDING.

**Otterbein, Philip William**, founder of the Church of the United Brethren in Christ; born June 3, 1726, at Dillenburg, Nassau, Germany; student and teacher in the Reformed Academy at Herborn; came as missionary to America in 1752, at call of Rev. Michael Schlatter, who was acting under the direction of the synods of Holland, as pioneer preacher to the German Reformed in America. Otterbein was a powerful preacher, and started a great revival in 1766.

**Ounce**, a unit of weight. In Troy weight, the ounce is one-twelfth of a pound, contains 20 pennyweights of 24 grains each, and is, therefore, equivalent to 480 grains. In avoirdupois weight, the ounce is the sixteenth part of a pound, and is equivalent to 437½ grains Troy. Also a money of account in Morocco, value, about six cents. In zoölogy, the snow leopard; habitat, the Himalayas, at an elevation ranging from 9,000 to 18,000 feet. It is about the size of a leopard, of which it is



probably an immature form; ground color pale yellowish-gray, dingy, yellowish-white beneath. The fur is thick, and it has a well marked short mane. It has never been known to attack man.

**Ouseley, Sir Frederick Arthur Gore**, an English composer; born in London, England, Aug. 12, 1825, only son of Sir Gore Ouseley. His works include treatises on "Harmony," on "Counterpoint," and "Fugue," and on "Musical Form" and general composition. Died in Oxford, April 6, 1889.

**Outlawry**, the act of outlawing; the state of being outlawed; the putting of a man out of the protection of the law, or the process by which a man is deprived of that protection, as a punishment for contempt in refusing to appear when called into court. Formerly any one might kill an outlawed person without incurring any penalty, but now the wanton killing of an outlaw is considered as murder. In the United States, in the case of notorious felons, a proclamation of outlawry sometimes issues from either the governor of a State or the President of the United States, and the proclamation is usually accompanied by a promise of pecuniary reward for the delivery of the criminal to the authorities either dead or alive, the captor being thus left to exercise his discretion as to the taking of life.

**Ovary**. In the human female the right and left ovary are two oval compressed bodies, attached to the uterus by a narrow fibrous cord, and more slightly by the fimbriated ends of the Fallopian tubes, which admit of the passage of the ovum from the ovary to the uterus, and, if it becomes impregnated, it remains there till the embryo is fully developed.

**Oven Birds**, birds found in South America. They are all of small size, and feed upon seeds, fruits, and insects. Their popular name is derived from the form of their nest, which is dome-shaped, and built of tough clay or mud with a winding entrance.

**Ovenshine, Samuel**, an American military officer; born in Pennsylvania, April 2, 1843; was commissioned a 2d lieutenant in the 5th United States Infantry, Aug. 5, 1861; promoted captain in 1864, major in 1885, and col-

onel of the 23d Infantry in 1895. He was a Brigadier-General of volunteers in 1898-1899, and in the latter year was promoted Brigadier-General, U. S. A., and retired. His last active service was in the Philippine Islands.

**Overbeck, Friedrich**, a German painter; born in Lübeck, July 3, 1789; distinguished for his large share in the movement from which arose the modern German school of art and the Christian art of the 19th century; early decided to abjure the classical renaissance and its sensuousness, and to "abide by the Bible," and in his paintings, poems, and essays he dealt almost wholly with religious subjects. He died Nov. 12, 1869.

**Overland Route**, a term applied to the oldtime route to California as distinguished from the route via the Isthmus of Panama. Also a term first used for the route from Europe to India via Egypt, the desert, and Suez. It was in contradistinction to the Cape route (by the Cape of Good Hope), which was by water only.

**Overshot Wheel**, a form of water wheel in which the water flows upon or near the top of the wheel. It acts principally by gravity, though some effect is of course due to the velocity with which the water arrives. Some overshot wheels have a circular rack or cogged rim near the periphery, so as to bring the body of water in close proximity to a pinion which communicates the motion to the machinery.

**Overyssel**, a province of the Netherlands; is watered by the Yssel river, which separates it from Gelderland, and by the Vecht and its affluents; principal industry stock-raising and dairy farming; chief towns, Zwolle, Deventer, Almelo, and Kampen; area, 1,295 square miles; pop. (1921) 437,320.

**Ovid, Publius Ovidius Naso**, a Roman poet of the Augustan age, of the equestrian order; born in Sulmo, 43 B. C. Augustus was a liberal patron to him; but he at length fell under the displeasure of the emperor, who, for some cause never explained, banished him from Rome, and sent him to live among the Getae, or Goths, on the Euxine. It is probable that the political intrigues of the Empress Livia and her son Tiberius led to his exile. He died in Tomi, A. D. 18.

**Owen, Sir Richard**, a celebrated English anatomist; born at Lancaster, 1804; died Dec. 18, 1892.

**Owen, Robert**, English Social reformer and author; born at Newtown, North Wales, May 14, 1771; died there, Nov. 19, 1858.

**Owen, Robert Dale**, an American author, reformer and diplomatist, son of Robert; born in Glasgow, Scotland, Nov. 7, 1801; was educated in Switzerland; removed to the United States in 1823; was Representative to Congress from Indiana (1843-1847); and minister to Naples (1855-1858). He died June 17, 1877.

**Owen Sound** (formerly SYDENHAM), town, port of entry, and capital of Grey county, Ontario, Canada; on Georgian bay and the Canadian Pacific and Grand Trunk railroads; 91 miles N. W. of Toronto; has an excellent harbor, much popularity as a summer resort, important manufacturing and shipyards, and a rich farming environment; and does a large business in grain, lumber, and canned goods. Pop. (1930) 12,368.

**Owensboro**, a city and county-seat of Davies co., Ky.; on the Ohio river and several railroads; 40 miles S. E. of Evansville, Ind.; is especially noted for its large tobacco interests; had in 1914, 62 manufacturing plants, employing \$4,058,058 capital and yielding products valued at \$4,056,142; was settled in 1815; chartered as a city in 1850; pop. (1930) 22,765.

**Owl**, in ornithology, a popular name for any nocturnal, raptorial bird, of which about 200 species are known.

Their classification is in a very unsettled state. Willoughby's division into two sections—one having "ears" or "horns," as the tufts of feathers on their heads were called, the other destitute of such appendages—was shown to be unnatural by Godfrey St. Hilaire. The prevailing color of the plumage is brown, with a tinge of rusty-red, and it is exceedingly loose and soft, so that their flight (even in the larger species) is almost noiseless, enabling them to swoop upon their prey, which they hunt in the twilight. If the victim is not too large, he is swallowed whole and such indigestible parts as hair and bones are coughed up in the form of pellets, many of which may be found around

any owl roost. And judging from the number of the pellets owls are very efficient in their destruction of rats and mice and may be classed among the beneficial birds.

The eyes of the owl work in unison from the front of the head rather than independently from the side as with other birds. The owl, whose range is world-wide nests in holes, deserted hawk and crow nests, and lays from one to five white eggs. The young are thickly covered with soft white down.

**Owlglass** (Ger. EULENSPIEGEL), **Tytl**, prototype of all the knavish "fools" of later time; said to have been born in the village of Kneittingen, in Brunswick. In youth, we are told, he wandered out into the world, and played all manner of tricks on the people whom he met with. His tomb is shown at Molln, about four leagues from Lubeck, where tradition makes him die about 1350; but the inhabitants of Damme, in Belgium, also claim to have his bones in their churchyard, and place his death in 1301.

**Owosso**, a city in Shiawassee County, Michigan. The city is located in a district abounding in coal deposits and engages in diversified manufacturing. The more important products are: door and window screens, furniture, ice cream, hickory handles, caskets and malleable iron. There are car and machine shops, meat packing plants and beet sugar refineries. Pop. 1920, 12,575. Owosso was settled in 1836 and chartered in 1859. It is served by the Grand Trunk, Michigan Central and Ann Arbor railroads as well as by motor bus lines.

**Owl Parrot**, the type and only known representative of a peculiar group of the parrot family, is a large bird, a native of the South Pacific Islands, and especially of New Zealand. In aspect and in nocturnal habits it resembles the owl. It feeds on roots, which it digs out of the earth with its hooked beak. It seldom flies; it is generally to be seen resting in hollow stumps and logs, and is said to hibernate in caves.

**Ox**, the popular name for the altered male of the bovine family, and for the family in general. It has been known from remote antiquity, and in

the East possessed, and in India still possesses, a sacred character. The domestic oxen consist of a great number of different breeds.

**Oxalic Acid**, formed commercially by fusing sawdust with a mixture of soda and potash to 204°, decomposing the oxalate with lime, and the lime salt with sulphuric acid, and afterward recrystallizing. The solution has a strong acid reaction, and is highly poisonous. The antidote is chalk or magnesia, with which it forms an insoluble compound, which is comparatively innocuous in the stomach.

**Oxenstjerna, Axel, Count**, a Swedish statesman; born in Fano, Sweden, June 16, 1583, studied theology at Rostock, Wittenberg, and Jena; and in 1602, after visiting most of the German courts, returned to Sweden and entered the service of Charles IX. In 1608 he was admitted into the senate; and on the accession of Gustavus Adolphus, in 1611, was made chancellor. He accompanied Gustavus Adolphus during his campaigns in Germany, taking charge of all diplomatic affairs; and on the fall of his master at Lutzen (1632) was recognized, at a congress assembled at Heilbronn, as the head of the Protestant League. This league was held together and supported solely by his influence and wisdom, and in 1636 he returned to Sweden after an absence of 10 years, laid down his extraordinary powers, and took his seat in the senate as chancellor of the kingdom and one of the five guardians of the queen. In 1645 he assisted in the negotiations with Denmark at Bromsebro, and on his return was created count by Queen Christina, whose determination to abdicate the crown he strongly but unsuccessfully opposed. He died in Stockholm, Aug. 28, 1654.

**Oxford**, a city and county borough in England; capital of Oxford Co., and seat of one of the most celebrated universities in the world; about 50 miles W. N. W. of London, on a gentle acclivity between the Cherwell and the Thames, here called the Isis. Of the 21 colleges, the most remarkable buildings are Christ's Church, the largest and grandest of all the colleges, with a fine quadrangle and other buildings, a noble avenue of trees (the Broad Walk), the cathedral serving as its

chapel; Magdalen College, considered to be the most beautiful and complete of all; Balliol College, with a modern front (1867-1869) and a modern Gothic chapel; Brasenose College; and New College (more than 500 years old), largely consisting of the original buildings, and especially noted for its gardens and cloisters; besides the Sheldonian Theater, a public hall of the university; the new examination schools, new museum, Bodleian Library, Radcliffe Library, and other buildings belonging to the university. Oxford depends mostly on the university, and on its attractions as a place of residence. Pop. (1926 Est.) 56,800.

**Oxford College**, an educational, non-sectarian institution for women in Oxford, O.; founded in 1849.

**Oxford Movement**. See TRACTARIANISM.

**Oxygen**, a dyad element existing in the free state in the atmosphere, and in combination in the ocean. It forms about one-fifth of the former and eight-ninths of the latter. It is also present in the great majority of substances forming the earth's crust, and is the most abundant of all the elements. It was discovered in 1774 by Scheele in Sweden and Priestley in England independently, but the name was given by Lavoisier some time after. It can be obtained pure by heating black oxide of manganese, or a mixture of this oxide with potassic chlorate in a retort, and collecting the gas over water. When pure it is without color, taste, or smell. It is the sustaining principle of animal life; is a little heavier than atmospheric air; and it has been reduced to the liquid state.

**Oyama, Iwao, Prince**, a Japanese soldier of the Satsuma clan; born at Kagoshima in 1844; first came into prominence in 1868, when he supported the Mikado; became Minister of War in 1880, and one of the two full generals of Japan in 1890; captured Port Arthur and Wei-Hai-Wei in the war with China in 1894; commanded in Manchuria in the war with Russia in 1904-5; created a prince in 1906; died Dec. 10, 1916.

**Oyer and Terminer**, the former name of courts of criminal jurisdiction in the United States, generally held at the same time with the courts of

quarter sessions, and by the same judges, and which have power, as the terms imply, to hear and determine all treasons, felonies, and misdemeanors committed within their jurisdiction.

**Oyster**, an edible mollusc, one of the Lamellibranchiate Mollusca, and a near ally of the mussels, etc. It belongs to the genus *Ostræa*, family Ostræidae, the members of which are distinguished by the possession of an inequivalve shell, the one half or valve being larger than the other. The shell may be free, or attached to fixed objects, or may be simply imbedded in the mud. The common oyster (*Ostræa edulis*) is the most familiar member of the genus. The fry or fertilized ova of the oyster are termed "spat," and enormous numbers of ova are produced by each individual from May, or June to September. The spat being discharged, each embryo is found to consist of a little body inclosed within a minute but perfectly formed shell, and possessing vibratile filaments or cilia, by which the young animal at first swims, and then attaches itself to some object. In about three years it attains its full growth. The oysters congregate in "oyster-beds."

The oysters most esteemed in the United States are the Virginian oyster and the Northern oyster. In the Virginian the shell is elongated and narrow, and the beaks pointed and not much curved. This is the common oyster from Chesapeake Bay S.; it is sometimes found in the vicinity of Boston; and also at the mouth of the St. Lawrence river; it multiplies so rapidly on some of the low shores of the Southern States as to offer impediments to navigation, and to change the course of tidal currents. In the Northern oyster the shell is more rounded and curved with the beaks short and considerably curved. Boston market is supplied principally from artificial beds derived from the Virginia and New York oysters. The flats in the vicinity of maritime cities are generally thickly beset with poles, indicating the localities of oyster beds. The principal sources of supply are the Chesapeake Bay, the coast of New Jersey, and Long Island Sound.

Formerly the oyster beds were almost wholly kept up by restocking them with seed oysters from Chesapeake

Bay and from the Hudson river; but of late years the spat is secured at spawning time, and new ground in the vicinity is brought under cultivation, till the area of oyster beds in Long Island Sound is now computed by miles rather than by acres, and it is yearly extending.

**Oyster Bay**, a town and village in Nassau county, N. Y.; on an inlet of Long Island Sound and the Long Island railroad; 30 miles E. by N. of New York city; is a popular seaside place of resort and residence; has large oyster and farming interests; and is popularly noted as the home of Theodore Roosevelt.



OYSTER CATCHER.

**Oyster Catcher**, a name applied to several American species of wading birds, also a handsome European bird, about 16 inches long.

**Oyster Crab**. This little crab is about the size and shape of a pea, resembling somewhat a bleached out spider. It is common on our coast.

**Ozark Mountains**, a chain of the United States, intersecting in a S. W. direction the States of Missouri and Arkansas; height about 1,400 feet.

**Ozokerite, Mineral Wax, or Ceresin**, a mineral found in large deposits in Utah and in the Austrian province of Galicia. Among other uses to which it is put are the making of liniments, salves, and plasters, sealing wax, wax matches.

**Ozone**, in chemistry, a modification of oxygen existing as a triatomic molecule. It is nearly always present in the atmosphere.

# P



**P**, the 16th letter and the 12th consonant of the English alphabet is a labial sound, formed by a compression of the anterior part of the lips, as in pull, papa, ap.

**Paca**, a small South American rodent, allied to the guinea pig. It lives singly or in pairs, passing the day in a hole at the root of some tree, or in a burrow. It is a vegetable feeder. The flesh is well flavored, and is eaten by natives and foreigners. It is one of the largest rodents, being about two feet long. It is generally of dark brown color, with four rows of white spots along the sides, the throat and belly white. A lighter-colored species has been described, but is perhaps a mere variety.

**Paca, William**, an American statesman; one of the signers of the Declaration of Independence; born in Wye-hall, Harford co., Md., Oct. 31, 1740; Governor of Maryland in 1782-1785; died in Wye-hall in 1799.

**Pacajas**, an Indian tribe of the lower Amazon, which formerly occupied much of the mainland on both sides of the Island of Marajo. They were agriculturists and lived in large villages. They do not exist now as a separate tribe.

**Pacay**, a Peruvian tree. The pure white, flaky matter in which the seeds are embedded is used as food, and the pods, which are nearly two feet long, serve for feeding cattle.

**Pace**, a step; a single change of the foot in walking, or manner of walking; gait, walk. Also a linear measure, representing the distance traversed by the foot from the place where it is taken up to that where it is set down in walking; it is variously estimated at 4 2-5 to 5 feet.

The military pace of a single step is two and one-half feet.

**Pachira**, a South American tree, the inner bark of which furnishes excellent cordage.

**Pachmann, Vladimir de**, a Russian pianist; born in Odessa, Russia, July 27, 1848. He studied under his father, who was a violinist of some talent, and was also a pupil of Dachs at Vienna. His first appearance was in 1869, and in 1871 he began his tours. He attained a high reputation.

**Pachomius**, an Egyptian monk; born toward the end of the 3d century, held in high estimation by the Roman Catholic Church, as the first to substitute for the free asceticism of the solitary recluse, a regular connobitic system. He was brought up as a pagan, but converted to Christianity by the kindness of certain Christians whom he met at Thebes. About A. D. 340, at Tabenna, an island in the Nile, he founded the first monastic institution. The members agreed to follow certain rules of life and conduct drawn up by Pachomius, and to subject themselves to his control and visitation. He established also the first convent for nuns, which was under the presidency of his sister; and he labored with so much diligence and zeal, that at his death, according to Palladius, not fewer than 7,000 monks and nuns were under his inspection. The various writings extant under the name of Pachomius are: "Regulæ Monastica," "Monita," "Epistolæ et Verba Mystica," and "Præcepta S. Pachonii."

**Pacific, University of the**, a co-educational institution in San Jose, Cal., founded in 1852 under the auspices of the Methodist Episcopal Church.



**Pacific, War of the,** a name usually given to the war by Chile against Bolivia and Peru in 1879-1883. Many battles were fought on sea and land in which the Chileans were, as a rule, victorious. A treaty of peace between Chile and Peru was signed at Ancon, Oct. 20, 1883, and ratified April 4, 1884. A treaty of peace between Chile and Bolivia was signed Dec. 11, 1883. By these treaties all the coast region of Bolivia and Tarapaca in Peru were permanently ceded to Chile.

**Pacific Ocean,** the largest of the five great oceans, lying between America on the E., and Asia, Malaysia, and Australasia on the W. The name "Pacific," given to it by Magellan, the first European navigator who traversed its wide expanse, is doubtless very appropriate to certain portions of this ocean; but, as a whole, its special claims to the epithet are, at the least, doubtful, though the name has by long usage become too well established to be easily supplanted by any other. The greatest length of the Pacific Ocean from the Arctic (at Bering Strait) to the Antarctic circles is 9,200 miles, and its greatest width, about 10,300 miles; while its area may be roughly estimated at about two-fifths of the whole surface of the earth. Its surface is studded with numerous islands, either scattered or in groups. The deepest sounding yet found in the Pacific Ocean is 26,850 feet, or about 5 miles—nearly equal to the height of the highest mountain on the globe. The coasts of the Pacific Ocean present a general resemblance to those of the Atlantic, and the similarity in the outline of the W. coasts of each is even striking, especially N. of the equator. The shore on the American side is bold and rocky, while that of Asia varies much in character. Though the Pacific Ocean is by far the largest of the five great oceans the proportion of land drained into it is comparatively insignificant. Its basin includes only the narrow strip of the American continent to the W. of the Andes and Rocky Mountains; Melanesia; which contains few rivers, and none of them of large size; the Indo-Chinese States, China proper, with the E. part of Mongolia, and Manchuria in the Asiatic continent.

The currents of the Pacific Ocean, though less marked in character and effects than those of the Atlantic are yet of sufficient importance to require a brief notice. The Southern Pacific current takes its rise S. of Van Dieman's Land, and flows E. at the rate of half a mile per hour, dividing into two branches about lon. 98° W., the N. branch, or Current of Mentor, turning N. and gradually losing itself in the counter Equatorial Current; the S. branch continuing its E. course till it is subdivided by the opposition of Cape Horn into two branches, one of which, the cold Current of Peru, or Humboldt's Current, advances N. along the W. coast of South America, becoming finally absorbed in the Equatorial Current; the other washing the coast of Brazil, and becoming an Atlantic current. The existence of this ocean first became known to Europeans through Columbus, who had received accounts of it from some of the natives of America, though it was first seen by Balboa, Sept. 29, 1513, and first traversed by Magellan eight years afterward. Captain Cook deserves the first place among the investigators of the Pacific Ocean.

**Pacific Railroads,** a general name given to all the railroads connecting the Pacific coast of the United States with other parts of the country, to which the aid of the National government was given in their construction. The Union Pacific railroad was built W. over the mountains, and the Central Pacific railroad was built E. from Sacramento. These two lines were joined, with impressive ceremonies, at Promontory Point, Utah, May 10, 1869. The last tie, of laurel wood, with a plate of silver upon it, was laid, and the last spike, made of iron, silver, and gold, was driven in the presence of distinguished men, the officers of the road and a large concourse of visitors. Telegraph wires were attached to the last rail, and the last blows were signalled upon bells in Washington and other large cities. When the signal was received in San Francisco and elsewhere all the church bells were rung and cannon were fired.

**Pacific University,** a coeducational institution in Forest Grove, Or.; founded in 1853 under the auspices of the Congregational Church.

**Packard, Alpheus Spring**, an American naturalist; born in Brunswick, Me., Feb. 19, 1839; was graduated at Bowdoin in 1861; and was for a time assistant to Agassiz at Cambridge. He took part in several scientific expeditions. He was best known as an entomologist; his classification of insects, proposed in 1863, has been generally accepted. He died in 1905.

**Packard, Frederick Adolphus**, an American lawyer, editor, and author; born in Marlboro, Mass., Sept. 25, 1794. He was editor of the publications of the American Sunday-school Union for nearly 40 years. He died in Philadelphia, Pa., Nov. 11, 1867.

**Packer, Asa**, an American capitalist and philanthropist; born in Groton, Conn., Dec. 20, 1806; was a member of the Pennsylvania Legislature, county judge, projector of the Lehigh Valley railroad, etc. He became the richest man in Pennsylvania. He served two terms in Congress. Died in Philadelphia, Pa., May 17, 1879.

**Pact of Paris**, or what is more popularly known as the Kellogg Treaty after former Secretary of State Kellogg who was really the father of the movement. To go back into the events leading up to the signing of the treaty: On the tenth anniversary of America entering the World War in 1917, M. Aristide Briand, then French Minister of Foreign Affairs, in a message to the American People through the Associated Press, proposed that the two republics resolve to 'outlaw' war. Dr. Nicholas Murray Butler, seeing the days pass without any action being taken, wrote an article to the New York Times setting forth the grand opportunity presented to start a move that should mean 'outlawing' war. The Washington Government held back from action until Dr. Butler's appeal had become a heated public topic. After about six months, Senator Capper demanded action on the Briand proposal, and defined a policy which he had drafted in three paragraphs which "renounced war as an instrument of public policy." Then Secretary Kellogg politely declined to proceed on any 'bilateral' treaty with France, but suggested a 'multilateral' agreement with all of the great powers to 'outlaw' war.

After many exchanges of notes between Kellogg and the representatives of Great Britain, France, Germany, Italy and Japan a final agreement was settled upon when the treaty was signed at Paris on August 27, 1928.

Representatives of 15 different nations signed the pact. The apparent utter innocence of the document is best shown by the appended synopsis and a verbatim copy of the "Covering Note."

**THE TREATY.** In a short preamble (explanatory introduction), starting with the names of the signatories, five explanatory paragraphs follow. They open with the words: "Deeply sensible of their solemn duty to promote the welfare of mankind; persuaded that the time has come when the frank renunciation of war as an instrument of national policy should be made to the end that the peaceful and friendly relations now existing between their peoples may be perpetuated," changes among themselves should be sought by peaceful and orderly process; and any signatory power hereafter seeking by war to promote its national interest "should be denied the benefits furnished by this treaty." The hope is expressed that other nations will follow the example by joining in the treaty. The articles agreed on are, verbatim, as follows:

**THE COVERING NOTE.** The different obstacles which arose during the course of these prolonged negotiations were overcome or "covered" in a special series of "articles." Secretary Kellogg places the United States construction of the intent of the treaty draft in its several points under six subheads: (1) Self-defense.—"There is nothing in the American draft of the anti-war treaty which restricts or impairs in any way the right of self-defense." (2) The League Covenant.—The covenant imposes no affirmative primary obligation to go to war. That is left to each member to decide; "it is an authorization not a positive requirement." (3) The Treaties of Locarno.—"If the parties to the Treaty of Locarno are under any positive obligation to go to war," the obligation does not attach until one of the parties breaks its pledges by going to war. Such resort to war

would also be breach of the multilateral anti-war treaty and release, automatically, the other members from obligation. (4)—Treaties of Neutrality.—If France should persuade "the States whose neutrality she has guaranteed to adhere seasonably to the anti-war treaty," no party to that anti-war treaty could attack the neutralized States without, automatically, violating the treaty and freeing the other members from obligation. (5) Relations with a Treaty-Breaking State.—As stated, there is no legal question that resort to war by one party releases the others from obligations to the treaty-breaking State. (6)—Universality.—While the United States wishes for world-wide application of the treaty, it is preferable not to postpone the treaty from coming into force.

The treaty is regarded as being greater in spirit than in actual effect and it is looked to as an initial step towards practical outlawry of war.

**Pactolus**, anciently the name of a small brook of Lydia, in Asia Minor, which rises on the N. slope of Mount Tmolus. The sands or mud of Pactolus were long famous in antiquity for the particles of gold dust which they contained. The collection of these particles, according to legend, was the source of Croesus' vast wealth. The brook is now called Sarabat.

**Paddle Fish**, a large fish allied to the sturgeons, so named from the elongated broad snout with which it stirs up the soft muddy bottom in search of food. It often reaches a length of from 5 to 6 feet. The paddle fishes are exclusively North American.

**Paderewski, Ignace Jan**, a Russian pianist; born in Podolia, Russian Poland, Nov. 6, 1860. In 1872 he went to Warsaw. At 18 he was nominated Professor of Music to the Warsaw Conservatory. In 1884 he held a professorship at the Conservatory of Music in Strassburg, but he resolved upon the more fascinating career of a pianistic virtuoso. He made his debut before the Viennese public in 1887, and was at once proclaimed to be one of the most remarkable pianist of the day. He visited the United States several times. During the World War he labored as-

siduously for Poland. In 1919 made Prime Minister of new Poland state.

**Paducah**, city, port of entry, and capital of McCracken county, Ky.; at junction of the Ohio and Tennessee rivers and on the Illinois Central and other railroads; 48 miles N. E. of Cairo, Ill.; is in a corn, wheat, tobacco, and peanut section; has very large tobacco interests; manufactures cotton, woolen, and knit goods, cigars, tobacco, pottery, sewer-pipe, vitrified brick, and tiling, and contains a Federal Building, Illinois Central Railroad Hospital, and Paducah University. Pop. (1930) 33,541.

**Paes**, or **Paezes**, an Indian tribe living in the mountains of Columbia.

**Paez, Jose Antonio**, one of the founders of South American independence; born of Indian parents near Acarigua, Venezuela, in 1790. He entered the patriot army in 1810, rose to general of division in 1819, and took a leading part in the battle of Carabobo, which secured the independence of Colombia in 1821. At first he acted in concert with Bolivar, but in 1829 he placed himself at the head of the revolution which culminated in the independence of Venezuela, of which he was the first president. He spent the latter part of his life in the United States. He died in exile in New York, May 7, 1873.

**Pagan**, a heathen, an idolater; one who worships idols or false gods (applied to one who is not a Christian, a Jew, or a Mohammedan).

**Paganini, Niccolo**, a famous violin virtuoso; born in Genoa, Italy, in 1784; died in 1840. His passionate style and technic are not equalled.

**Page**, a youth attached to the service of a royal or noble personage, rather for formality or show than for servitude. The word is also applied to messenger boys in National, State, and municipal legislative bodies.

**Page, Thomas Jefferson**, an American naval officer; born in Shelley, Gloucester co., Va., Jan. 4, 1808. In 1853-1856 he was lieutenant-commander in explorations in South America. He resigned in 1861 and entered the Confederate service. He then left the service and subsequently resided in the Argentine Republic and

in Florence, Italy. He died in Rome, Italy, Oct. 26, 1899.

**Page, Thomas Nelson**, an American diplomat born in Oakland, Va., April 23, 1853; was educated at Washington and Lee University; practiced law in Richmond, Va., in 1875-93; then devoted himself to literature till June 21, 1913, when he was appointed Ambassador to Italy. His publications, which are quite numerous, are drawn from Southern life and history. Died, 1923.

**Page, Walter Hines**, an American diplomat; born in Cary, N. C., Aug. 15, 1855; was educated at Randolph-Macon College; edited "The Forum," 1890-5; "The Atlantic Monthly," 1896-9; and "The World's Work," 1900-13; member of the publishing firm of Doubleday, Page & Co. from 1899; appointed Ambassador to Great Britain in 1913. Died, 1918.

**Page, William**, an American artist; born in Albany, N. Y., Jan. 23, 1811. He painted portraits of John Quincy, the Brownings, Charlotte Cushman, and many other notables, and a full-length painting of Admiral Farragut, presented to the Emperor of Russia. He died Oct. 1, 1885.

**Pago Pago**, a harbor in the island of Tutuila, Samoa. It is a long L-shaped expanse of water, extending mostly in an E. and W. direction, and surrounded by tall, almost precipitous cliffs, that run up into peaks from 2,000 to 3,000 feet high. The harbor was ceded to the United States for a naval and coaling station, first in 1872, and afterwards confirmed by a treaty signed in Washington, Jan. 17, 1878. This harbor was occupied by the United States in 1898, with the purpose of utilizing its advantages as a coaling and supply station.

**Pagoda**, the temple of an idol in India, belonging both to antiquity and modern times. They consist of one or more quadrangular courts with towers at the corners, surrounded by a wall. Large pyramids rising in stages cover the entrance, behind which extend colonnades. Inside the courts are lustral pools, colonnades, and large halls, called Tschultris, which are used to lodge pilgrims in. Small side temples appear with cupolas surmounting the accessory build-

ings. Behind the first court is often a second and a third, in which, finally, the chief temple stands. The most celebrated is that of Juggernaut, in the island of Ramisseram, built in the latter part of the 12th century.

**Pahang**, one of the Federated Malay states; area 14,000 square miles; pop. (1921 Est.) 146,064; imports \$4,388,985; exports \$6,105,305.

**Paine, Charles Jackson**, an American sportsman; born in Boston, Mass., Aug. 26, 1833; was graduated at Harvard College in 1853 and entered the National army as captain of the 22d Massachusetts Volunteers on Oct. 8, 1861; served with distinction during the Civil War; received the brevet of Major-General of volunteers on Jan. 15, 1865, and was mustered out of the service in January, 1866. After the war he began to occupy his spare time with yachting; became a member of the New York Yacht Club, and four times successfully defended the "America's" Cup; once in 1885, when he defeated the "Genesta" with the "Puritan," again in 1886, when he defeated the "Galatea" with his "Mayflower"; again in 1887, with the "Volunteer" against the English "Thistle"; and last in 1893, when he defeated Lord Dunraven's "Valkyrie" with the "Vigilant." He died Aug. 12, 1916.

**Paine, Halbert Eleazar**, an American military officer; born in Chardon, O., Feb. 4, 1826. He was a general in the Union army during the Civil War; Republican member of Congress from Wisconsin in 1865-1871; and Commissioner of Patents in 1879-1881. He died in 1905.

**Paine, John Knowles**, an American organist and composer; born in Portland, Me., Jan. 9, 1839; was Professor of Music from 1874 at Harvard College. He composed the march and hymn for the World's Columbian Exposition. He died April 25, 1906.

**Paine, Robert Treat**, an American jurist; signer of the Declaration of Independence; born in Boston, Mass., March 11, 1731; was a delegate to provincial and continental congresses, and held offices of attorney-general of Massachusetts and judge of the Supreme Court; was an able judge. He died in Boston, May 11, 1814.

**Paine, Robert Treat, Jr.**, an American poet; born in Taunton, Mass., Dec. 9, 1773. During the greater part of his career he was engaged in various literary pursuits, though he was at one time in business, and later practised law for a brief period. He will be best remembered as the author of two songs, "Rise Columbia," and "Adams and Liberty." He died in Boston, Nov. 13, 1811.

**Paine, Thomas**, an American political writer; born in England, in 1737. He early distinguished himself by his literary abilities and republican ideas. At the outbreak of the Revolutionary War he, in 1774, emigrated to the United States; gave an impulse to the Revolution by his famous pamphlet called "Common Sense," in which he advocated the policy of separation and independence. He went to Paris in 1789. In September, 1792, he was elected a member of the French National Convention, acted with the Girondists, narrowly escaped death in the Reign of Terror, and brought out in 1793 his celebrated infidel work entitled "The Age of Reason." He returned to the United States in 1802 and died in New York, June 8, 1809.

**Painter's Colic**, a disease which derives its name from the fact that painters are more frequently attacked by it than persons of other occupations.

**Painting**, an art which, by means of light, shade, and color, represents on a plane surface all objects presented to the eye or to the imagination. Painting appears to have had its origin among all nations as a species of writing. Considered as an art, it may be said to consist of two chief parts—outline and design. Outline is a design without color, and examples of it may be seen in the cartoons of Raphael, Retzsch, Flaxman, and others. Design, properly so called, includes outline, representing the contour of objects, together with color, which gives to the image not only the hue, but also the form and relief proper to the object.

**Palute**, or **Plute**, a name strictly belonging to a small tribe of North American Indians living in Southwestern Utah, but generally given to a number of Shoshonean tribes which are scattered throughout Utah, Ne-

vada, Arizona, and Southeastern California. They number in all about 5,000.

**Paixhans, Henri Joseph**, a French military officer; born in Metz, in 1783. He was the inventor of the guns and projectiles which bear his name. The Paixhans guns are adapted to throw shells and hollow shot. He died in 1854.

**Pakenham, Sir Edward Michael**, an English military officer; born in Ireland, March 19, 1778. He commanded the British expedition against New Orleans in 1814. He led the British bravely in the battle of New Orleans, January 8, 1815, and was killed while urging on his men.

**Palaeologus**, an illustrious Byzantine family, first mentioned about 1078, when George Palaeologus was a faithful servant of the Emperor Nicephorus III. He was killed while defending Dyrrhachium, or Durazzo, against the Normans in 1081. The Palaeologi, the last Greek family that occupied the throne of Constantinople, reigned from 1260 to 1453. A branch of the Palaeologi ruled over Montferat in Italy from 1305 to 1530.

**Palaeontology**, the science of extinct forms of life, including only extinct animals, palaeobotany being the term used for extinct plants. The science began with the Ancient Greeks and, considering the age, made remarkable headway. During the Middle Ages it had its rebirth many times through Man's curiosity as to the origin of fossils. Even though the Mosaic account of sudden creation was accepted, men wondered and tried to account for fossils. The generally accepted idea was that they represented failures in the attempt to create life. Another idea was that they represented casualties resulting from the great flood.

In the eighteenth century the idea was set forth that, since the fossils differed so much in the various strata, life must have been created and destroyed about 28 times during the world's history. About the time of Darwin, scientists became convinced that the Earth was older than 6,000 years, and that life went thru evolutionary changes.

The general findings of Palaeontology are somewhat as follows: In the oldest rocks no fossils exist, but as we come to the younger ones, we gradually find simple fossils representing very



low forms of life. As we examine the still younger rocks, the fossils become more complex,—representing the higher forms of life, until at last we find human remains.

Palaeontology in connection with geology indicates that throughout most of geologic times in which life is known to have existed upon the earth (about 500,000,000 years) the climate has been tropical over the whole world; but periodically (millions of years apart) mountain ranges are thrown up, and volcanoes burst forth and disarrange the climate of the earth to such an extent that most of the forms of life are killed. Gradually the mountains wear down, the volcanoes subside, and living conditions become excellent until the next revolution.

During these favorable climatic conditions, life becomes plentiful, and many new species are formed. At the next revolution all types of life not able to adapt themselves readily to the new changing conditions are exterminated. (See Natural Selection.)

The chief causes of extinction are over-specialization of parts. For example: let us suppose that it becomes necessary for snakes to fly in order to avoid a new enemy. Snakes have no appendages which, by evolution, could ever become wings. Therefore naturally they are quickly exterminated. Another reason is that all forms of life, the triolbites for example, run a course of evolution which corresponds much to man's life.

When the triolbites first appeared some 500,000,000 years ago in the Cambrian rocks, they were simple little creatures much as human babies are simple, but capable of much development. Later fossils show that they subdivided into many species of considerable variety. This was their youth. Still later they developed, in that period which would correspond to middle life, bizarre ornamentation. At this period their drastic changes produced other forms of life of which scorpions, spiders, and crabs are modern representatives. Later, the triolbites lost their ornamentation and reverted back to simple little creatures and finally became extinct.

The work of a palaeontologist consists chiefly in gathering fossils, classi-

fying them, and reconstructing them in replicas of the original surroundings. For example, if we find an animal associated with a coral, we know that it lived in warm clear water, because corals are so constructed that they can only live in warm clear water. So the chain of evidence is pieced together until the palaeontologist is able to reconstruct whole continents somewhat in details as regards mountains, rivers, vegetation, climate and animals.

Among the most recent fossil excavations have been in the prison yard at Carson City, Nevada. Here in the sandstone were found many tracks of animals we do not know today as well as those of the elephant, horse, and birds, the majority of which swung up to a cliff and disappeared beneath a wall.

The Grand Canyon has always been of intense interest to the Palaeontologist. In the bottom of the Canyon we have the oldest known rocks, and at the top some of the youngest; and intervening strata well represent the intervening ages and bear fossils accordingly. This ground is still being exploited and will, undoubtedly, yield many specimens valuable in giving a clue of conditions existing in early ages.

**Palaeozoic, or Paleozoic**, in geology, the term generally applied to the series of strata commencing with the first rocks which have traces of life, and ending with the upper part of the Permian.

**Palæstra**, originally in Greece a place for wrestling, afterward a place for training the athletes who contended in the public games.

**Palaihuian, or Pit River, Indians**, a collection of tribes which formerly occupied the territory drained by Pit river and its tributaries in Northeastern California. They are now almost extinct.

**Palais Royal**, a popular resort of the Parisians, originally a royal palace as the name implies. The original palace was built (1629-1636) by Richelieu, and by him presented to Louis XIII. It was confiscated by the Republicans in 1793, and the Tribunal sat in the palace during the Reign of Terror. At the Restoration it was repurchased by the Duke of Orleans, but in the Revolution of 1848

## Palanquin

it was again appropriated to the state. In 1871 it was set on fire by the Communists, but has since been restored.

**Palanquin**, or **Palki**, the vehicle commonly used in Hindustan and the East by travelers. It is a bamboo or wooden box about 8 feet long, 4 feet wide, and 4 feet high, with shutters which can be opened or shut at pleasure. It is borne by means of poles on the shoulders of coolies.

**Palate**, the roof of the mouth. The fore part is called the hard palate and the back part the soft palate.

**Palatinate**, **Lower**, or **Palatinate of the Rhine**, the name formerly given one of two German states which were called by way of distinction, the Upper and Lower Palatinate, and though not contiguous, were under the control of the same sovereign till 1620. At that period they underwent great changes. Since the wars of the first French Revolution, which contributed more than any event on record to unsettle the ancient landmarks, they have been divided among different German sovereigns, and their very name has disappeared from the maps of Germany.

**Palatine Hill**, one of the seven hills of Rome. It borders on the Forum and is said to be the site of the city founded by Remus.

**Palenque**, a village of Mexico, state of Chiapas, about 100 miles E. N. E. of Ciudad-Real. About 7 miles S. W. of it are extensive and magnificent ruins. Most of the buildings are of one story, but a few are two, three, and some have even four stories. The principal structure, known as the Palace, is 228 feet long, 180 feet deep, and 25 feet high, standing on a terraced, truncated pyramid of corresponding dimensions. It was faced with cut stone, cemented with mortar of lime and sand, and the front covered with stucco, and painted. A corridor runs around the building, opening into four interior courts, which open into many smaller rooms. These ruins were in the same condition when Cortez conquered Mexico, as now, overgrown with a forest, and their site forgotten. They were only discovered in 1750. There are in Mexico dim traditions of the existence, at a remote period, of the capital of a theo-

## Palestine

cratic state, the center of a long since extinguished civilization, of which the only traces are these wonderful ruins and unexplained hieroglyphics.

**Palermo** (ancient Panormus), the capital city, and a seaport of Sicily, on its N. W. extremity. It is built on the S. W. of an extensive bay, in a plain, which, from its luxuriance and from being surrounded by mountains on three sides, has been termed the "golden shell." In the front of the city is the Mariana, a raised terrace, extending more than 1 mile along the bay, and is about 200 feet wide. Near Palermo are many fine specimens of Saracenic architecture. Palermo, the ancient Panormus, is first mentioned in history 480 B. C., when the Carthaginians made it a naval station. It was taken by the Romans 254 B. C., and it became one of their principal naval stations. It fell into the hands of the Goths, in 493. The Saracens captured it in 835, and made it the capital of their Sicilian territories. The Normans took it in 1072. Palermo was taken by Garibaldi in May, 1860. Pop. (1926 Est.) 419,153.

**Palermo, Gulf of**, a bay or arm of the Mediterranean Sea, near Palermo.

**Palestine**, or **Holy Land**, a country of Southwestern Asia, comprising the S. part of Syria; length, 193 miles; average breadth, 75 miles; area, 11,000 square miles. The surface is generally mountainous, interspersed from N. to S. by the mountain chain of Lebanon, Mount Hermon, the highest peak, attaining an elevation of 10,000 feet. There are numerous other peaks, some of which are made famous by their frequent mention in sacred history: Mount Carmel, forming a promontory in the Mediterranean on the S. W. of the Bay of Acre; Mount Tabor, at the N. E. extremity of the plain of Esdraelon; Ebal and Gerizim, in Samaria; Gilead, and Nebo or Pisgah, E. of the Jordan; and Zion, Moriah, and the Mount of Olives, in or near Jerusalem. Judæa proper, the ancient kingdom of Judah, comprises the territory extending from Lake Asphaltites to the sea. To the N. of ancient Judæa was Samaria, a mountainous district, but flourishing and well cultivated. To the N. of Samaria, but still communicating with Judæa

by the banks of the Jordan, is Galilee, distinguished by its natural beauty and fertility. The Lake of Tiberias, or Gennesareth, is surrounded by lofty and picturesque hills, the sides of which were once highly cultivated, and its banks covered with flourishing towns, now almost deserted. In many parts there are the remains of ancient ruins. The rivers are the Jordan, Jarmuth, Kishon, and the Nahr, Naman or Belus. The lakes are Gennesareth, and the Dead Sea. The climate is very fine in the dry season. Frosts are slight in winter, except in the elevated parts, where snow occasionally falls.

The name Palestine is derived from the Hebrew Pelescheth, or land of the Philistines, and is properly applicable to the S. W. portion of the country. Its most ancient name was Canaan, its inhabitants being descended from Canaan, the fourth son of Ham and grandson of Noah. In the time of Moses the country E. of the Jordan was conquered and divided among the tribes of Reuben and Gad, and half of the tribe of Manasseh; under Joshua, the remainder was conquered and divided between the other 10 tribes. Under the reigns of David and Solomon it became one of the most flourishing kingdoms of Asia. It was conquered, however, by the kings of Nineveh and Babylon, who carried captive first Israel and then Judah, into the E. provinces of their empire. After the conquest of Babylon by Cyrus, the Jews were allowed to return to their country, to rebuild their temple, and reestablish their ecclesiastical constitution. Palestine continued a province of Persia till after the conquest of Alexander, to whom it submitted without resistance. The Jews were again exposed to oppression from some of the Ptolemies, who having attempted to enforce the adoption of the Grecian idolatry, were met with the most determined resistance by the Maccabees, and Judæa now became an independent country. It subsequently fell under the dominion of Rome, who established the Herods as tributary kings. It was at this period that Palestine became the theater of those great events which form the foundation of Christianity. The Jews, however, having rebelled repeatedly against

the Romans, Titus entered Judæa with a large army, took Jerusalem, which he razed to the ground, and carried the whole nation captive, dispersing them throughout the Roman empire. The country remained in the power of the Romans till the conversion of the empire to Christianity, when it became an object of religious veneration. In the 6th century it fell under the sway of the Mohammedans, which gave occasion to the Crusades. Jerusalem was taken by the European forces, and was under Godfrey of Bouillon erected into a Latin kingdom, which endured for above 80 years, during which the Holy Land streamed with Christian and Saracen blood. In 1187 Judæa was conquered by Saladin, then it passed through various hands, till, in 1517, it was added to the Turkish empire.

In 1917 Palestine included the sanjak or province of Jerusalem (to which was added in 1906 the Kaza of Nazareth), part of the vilayet of Beirut, and part of the vilayet of Syria. The population of Jerusalem is about 65,800; Jaffa, 48,709; Gaza, 18,000; and Nazareth, 8,500. A number of Jewish colonies, founded by Baron Rothschild and assigned to the Jewish Colonization Association in 1900, are flourishing in the rich plain of Sharon. There were also some settlements of Germans.

Palestine was conquered by British troops under General Allenby in Dec., 1917. In July, 1920, civil government under British rule was established. A new constitution was promulgated in Sept., 1922.

**Palfrey, Francis Winthrop**, soldier and historian; born in Boston, Mass., April 11, 1831; died in 1889. He graduated in 1851 from Harvard College; and served through the whole of the Civil War.

**Palfrey, John Gorham**, an American clergyman and author; born in Boston, May 2, 1796. He was graduated at Harvard; was pastor of Brattle Street Unitarian Church, Boston; professor in Harvard; member of the State Legislature; secretary of State of Massachusetts; and member of the Anti-Slavery Congress at Paris, 1867. His enduring work is "The History of New England." Died in Cambridge, Mass., April 26, 1881.

**Palfrey, Sarah Hammond**, pseudonym E. Foxton, an American novelist and poet, daughter of John G.; born in Boston, Mass., Dec. 11, 1823. She resided in Cambridge, Mass.

**Pali**, an Indian language, originally the popular dialect of Magadhia, now Behar. Buddha preached in it, and the writings embodying his faith were composed in it, on which accounts it became the sacred language of Buddhism. It is closely akin to Sanskrit.

**Palimpsest**, a MS. parchment, or of papyrus, paper, or other material, which, after only a partial erasure, has been written over a second time, and on which the former writing is more or less discernible. When the MS. had been written with one of the species of ink employed by the ancients, there was little difficulty in obliterating the writing; it was accomplished by the use of a sponge, and, if necessary, of a scraper and polishing-tool. But when the ink was mineral, its effect reached beyond the surface. In that case a scraping-tool or pumice-stone was indispensable; if these were hastily or insufficiently applied the erasure was imperfect; and thus it often happens in ancient MSS. that, from lack of proper care in preparing the parchment for rewriting, the original writing may still be read without difficulty.

The practice of re-preparing used parchment for second use existed among the Romans. We meet frequent allusions in the classical writers, as Plutarch, Cicero, Catullus, and others, to the palimpsest, and it appears equally certain that in many cases whole books were written upon re-prepared parchment or papyrus, not only among the Greeks and Romans, but among the ancient Egyptians also. It is to the necessities of the mediæval period that literature owes the unquestionably important advantages which have arisen from the revival of the ancient practice of re-preparing already used material for writing.

**Palisade**, a fence or fencing of pales or stakes driven into the ground, to form an inclosure, as a protection to property. In fortification, a row of stakes set firmly in the ground and presenting a sharp point to an ad-

vancing party. The stakes are placed vertically at the foot of the slope of the counterscarp, or presented at an angle at the foot of a parapet, or on the banquette of the covered way. The name is applied to the precipitous west bank of the Hudson river opposite upper New York city, called "The Palisades."

**Palissy, Bernard**, a French potter and chemist; born near Agen about 1508. His pottery has become celebrated, and few things are more prized by the connoisseur than the famous "Palissy ware." Being a Protestant, he was arrested by the Leaguers, toward the end of the reign of Henri III., and died in the Bastille in 1589.

**Palladium**, in classical antiquities, a celebrated statue of Pallas or Minerva, on the preservation of which depended the safety of the city of Troy. Hence, in common speech, anything on which the safety of a nation or people is said to depend.

**Pallas**, in Greek mythology, the goddess of wisdom. Her attributes and character were similar to those of the Roman Minerva.

**Palliser, Sir William**, a British military officer; born in Dublin, Ireland, June 18, 1830. He entered the army as a cavalry officer; in 1863 invented the chilled shot that bears his name, and a system of strengthening cast-iron ordnance by the insertion of a steel tube. He retired in 1871, and died Feb. 4, 1882.

**Palliser Projectiles**, in ordnance, cylindro-conoidal missiles, chilled at their points by being cast in molds of which the lower part is of iron, the upper part filled with the usual casting sand. Thus the point, being rapidly cooled, is intensely hard, but the rear part of the projectile is of ordinary cast-iron. They are made with a small cylindrical hollow inside, closed with a screw plug. When used as shells, this hollow is filled with a small bursting charge of powder, enclosed in a serge bag. They do not require a fuse, but explode on striking a hard object owing to the heat generated by the collision.

**Pallium**, a square woollen cloak, capable of enveloping the entire person, which it could cover at night as a blanket. It was much worn by the Greeks, corresponding to the toga of



the Romans. Also an ecclesiastical vestment of the Roman Catholic Church. In the time of Gregory VII. (1073-1085) archbishops went for it to Rome; afterward the Popes sent it to them when they received their appointment. About 1370 Gregory XI. issued a decretal which rendered it imperative on an archbishop to have received the pallium before he could call a council, consecrate a bishop, or discharge other functions of his office.

paceous, plum-like, or, as in the coconut, nut-like. Palms are natives chiefly of the tropical regions of the earth. Their stately habit, the elegant proportions of the stems, and the grace and beauty of the leaves of the majority of the larger species, coupled with the great variety and utility of the products of all, mark them as a most distinguished and valuable group of plants. Their stems when young and tender are delicious and nutri-



SAGO PALM: *CYCAS REVOLUTA*.

**Palm**, a natural order of endogenous plants, the products of which are of extreme importance and utility to man. The size of the leaves varies, some being only a few inches in length, while in others they attain the enormous proportions of 35 feet in length by 5 or 6 feet in breadth. The flowers are small individually, but numerous, usually of a yellow tint, and in some species powerfully odorous. The fruit when ripe is berry-like, dru-

tious food; when old and mature those of certain species yield valuable farinaceous substances. Some are valuable as timber trees, and the terminal bud of several consists of a mass of tender mucilaginous leaves, which are esteemed a delicate and delicious vegetable. Many yield by incision or otherwise an abundance of sweet sap, from which sugar, refreshing drinks, wines, spirits, and vinegar are obtained. Their leaves are used for thatch, and



## Palm

for the making of mats, baskets, hats, umbrellas, thread, cord, and clothing. They yield excellent and inexhaustible materials, and they are in some cases a natural substitute for writing paper, the records and writings of many Eastern peoples being inscribed upon them. The true cabbage palm is a noble species indigenous to the West Indies, attaining the height of 170 to 200 feet, with a diameter of stem of about 7 feet. The terminal bud or "cabbage" is enclosed among many thin snow-white brittle flakes. It has the flavor of the almond, but with greater sweetness, and is boiled and eaten with meat. As its removal causes the death of the tree, it is regarded as an extravagant delicacy only rarely to be enjoyed.

The kiziuba palm is a native of Central and South America, and is a singular tree on account of its habit of growth. The roots all spring from the stem above the ground, every new root emerging from a point somewhat higher on the stem than the one which preceded it. And as the old roots decay, as the new are produced and penetrate the ground, a tree of some age presents the curious spectacle of being supported on three or four legs long enough and wide enough apart to enable a man to pass between them erect. The timber is used in flooring and for making umbrella sticks, musical instruments, etc.

The sugar palm is a native of the Moluccas, Cochin-China, and the Indian Archipelago, and is of immense value to the natives of these countries on account of its various products. It yields an abundant sweet sap, from which a chocolate-colored sugar is made. The sap fermented makes an intoxicating drink variously named by the inhabitants of the different countries. From the pith of the stem sago is obtained in great quantity, a single stem yielding as much as from 150 to 200 pounds.

The genus *Calamus* and its immediate allies are regarded as forming a connecting link between the palms and the grasses, having the inflorescence and fruit of the former and in some cases the habit of the latter.

The Piritu of Venezuela, the Paripou of Guiana, and the Papunba of the Amazon, are the local names of one

## Palm

species of palm, which produces fruits somewhat triangular in shape, about the size of an apricot, and bright reddish yellow in color. They have a peculiar oily flavor, and are eaten boiled or roasted, when they resemble chestnuts. They are also ground into meal, which is baked in cakes. The Great Macaw tree of the West Indies is a native of Jamaica, Trinidad, and the adjacent islands and continent. In Brazil it is called Macahuba, and in Guiana Macoya. The tree grows from 20 to 30 feet high, with a crown of leaves, each of which measures from 10 to 15 feet in length. The fruit yields an oil of yellow color, sweetish taste, and having the odor of violets, which is used in North America and Europe in the manufacture of toilet soaps. The nuts are capable of receiving a high polish, and are converted by the natives and the negroes into ornaments. The Tucum palm, a native of the Rio Negro and the Upper Amazon, yields a very superior fiber, the cordage from which is knitted into hammocks, which are in great demand with the Brazilians. The fleshy outer covering of the fruit is eaten by the natives. The Murumuru palm produces a very agreeable fruit with the fragrance of musk. Cattle eat the fruit with avidity.

The Coquito of Chile is a tree of about 50 feet in height, with a spreading crown of leaves. From its trunk a syrup is obtained called miel de palma, which is much esteemed by the Chileans and foreigners in cookery. It is obtained by cutting down the tree and lopping off its crown of leaves, when the sap flows from the wound, and is carefully collected; by cutting off a fresh slice from the wound daily, or when the flow of sap becomes weak, it may be kept flowing for several months; a good tree is said to yield as much as 90 gallons of sap, which on being boiled down assumes the consistence of treacle. There are many other useful and interesting species of palm.

**Palm, Johann Philipp**, a bookseller of Nuremberg, who acquired historic celebrity as a victim of Napoleonic tyranny in Germany; born in Schorndorf, in 1768. In the spring of 1806 a pamphlet entitled "Germany in its Deepest Humiliation," which

## Palma

contained some bitter truths concerning Napoleon and the conduct of the French troops in Bavaria, was sent by his firm to a bookseller in Augsburg in the ordinary course of trade. The book fell into the hands of Napoleon's officers; they made the emperor acquainted with it. He ordered Palm, as the publisher, to be arrested, tried him by court-martial, and shot him at Braunau, Aug. 26, 1803. This murder greatly incensed the German people against the French.

**Palma**, the capital of the island of Majorca and of the Balearic Islands, on the Bay of Palma, on the S. coast.

**Palma, Tomas Estrada**, a Cuban statesman and soldier, called the "Franklin of Cuba"; born in Bayamo, Santiago de Cuba, July 9, 1835. He was educated at Havana; subsequently studied law at the University of Seville, Spain, and after his graduation returned to his native place. When the first suggestion of uprising was heard in 1865 he became interested and in 1867 threw himself into the conspiracies which had independence for their object. When Cespedes raised the standard of revolt, Oct. 10, 1868, Palma freed his slaves, raised all he could from his tax-drained estates and aided the movement to the utmost. He took the field and his devoted mother shared the dangers of camp life with him. During his absence, one day, his detachment was surprised by the Spanish and his mother captured. She was compelled to walk behind the troops till she fell from exhaustion, and was abandoned in the woods, where her son found her, two weeks later, starving. She died in three days.

After the capture of Bayamo, which quickly followed the outbreak of the war, Palma was elected to the Cuban assembly and became secretary of the republic under the presidency of Spoturno. On the resignation of Spoturno, the Cuban Assembly elected Palma president, March 29, 1876. He performed the duties of the office with ability, but was captured by a force of Spanish soldiers while on a journey. He was first taken to Havana and imprisoned for five days in Morro Castle. He was then sent to Spain and imprisoned for a year in the castle of Fieuras. On the subsequent

## Palmer

surrender of the revolutionists he was set at liberty and went first to Paris, and from there to New York. Later he went to the republic of Honduras, where he began work as a schoolmaster and became postmaster-general. He there married the daughter of President Guardiola and returned to the United States, where he settled in Orange co., New York. Was elected President of Cuban republic in 1901; re-elected in 1906; resigned in latter year; died Nov. 4, 1908.

**Palm Beach**, a village and health and pleasure resort in Dade county, Fla., on Lake Worth and the Florida East Coast railroad; 65 miles N. of Miami; is beautified with cocoa palms and other tropical trees and shrubs; offers excellent fishing and sailing on the lake, which is but a short distance from the ocean; and in recent years has become widely noted for auto meets and contests.

**Palmer, Alonzo Benjamin**, an American physician; born in Richfield, N. Y., Oct. 4, 1815. He studied medicine in New York and Philadelphia. In 1852 he was chosen to the chair of anatomy in the Medical School of the Michigan University; later he took the chair of materia medica, and in 1860 he was appointed Professor of Pathology and the Practice of Medicine. Died Dec. 23, 1887.

**Palmer, Arthur Hubbel**, American educator; born Cleveland, O., June 30, 1852; Professor German Language and Literature Adelbert College 1883-1891; then at Yale.

**Palmer, Erastus Dow**, an American sculptor; born in Pompey, N. Y., April 2, 1817; chief work: the statue of Robert R. Livingston in the National Capitol. He died in 1904.

**Palmer, Sir Charles Mark**, an English shipbuilder; born in South Shields, Nov. 3, 1822. He established the shipbuilding yard at Jarrow on the Tyne, where the first screw collier, the "John Bowes," was launched in 1852. He developed the Jarrow works into the gigantic concern, now Palmer's Shipbuilding and Iron Company, Limited, which constructs an ocean steamer from the iron ore of its own Yorkshire mines, through all its processes. He died in 1907.

**Palmer, Courtlandt**, an American lawyer; born in New York, in 1843. He died in New York, in 1888.

**Palmer, Edward Henry**, the "Sheikh Abdullah," an English Orientalist; born in Cambridge, England, Aug. 7, 1840. He was elected by the government for the perilous mission of winning over the Sinai tribes to Great Britain and hindering the destruction of the Suez Canal. He made two expeditions during the second of which he was killed, Aug. 11, 1882.

**Palmer, George Herbert**, an American educator; born in Boston, Mass., March 19, 1842; was graduated at Harvard in 1864; was assistant Professor of Philosophy at Harvard and in 1889 became Professor of Natural Religion, Moral Philosophy and Civil Polity there.

**Palmer, John McAuley**, an American lawyer; born in Eagle Creek, Scott co., Ky., Sept. 13, 1817. In 1831 his parents removed with him to Madison co., Ill. In 1841 he was admitted to the bar, and in 1843 was elected probate judge of Macoupin co., Ill.; in 1847 was elected a member of the constitutional convention, and in 1849 county judge of Macoupin county. He was elected to the State Senate in 1852, and reelected in 1854. He presided over the Republican State Convention in 1856, and represented the party in the National Convention in which John C. Fremont was nominated. He made an unsuccessful canvass for Congress in 1859, and was chosen elector on the Lincoln ticket in 1860. He entered the army in 1861, and served with distinction, retiring in 1866 with the rank of Major-General, U. S. A. He then settled in Springfield, Ill., and resumed his civil career. In 1868 he was elected 16th governor of Illinois, and served four years. In 1872 he returned to the Democratic party and supported Greeley for President. He was nominated by the Democrats in the Legislature in 1877 and twice afterward as their candidate for United States Senator, without being elected; was delegate-at-large to the National Democratic convention in 1884, and was nominated by the Democratic State convention for governor in 1888 and defeated. In 1890, by an innovation in politics, the Democratic nomination for United States Senator

was made by the State convention, and fell on General Palmer, at which time he was elected. In 1896 he was the candidate of the Gold Democrats for President of the United States. He died in Springfield, Ill., Sept. 25, 1900.

**Palmer, John Williamson**, an American author; born in Baltimore, Md., April 4, 1825. In 1870 he settled in New York; subsequently was connected with the staff of the "Century Dictionary." He died in Baltimore, Md., Feb. 26, 1906.

**Palmer, Julius Auboineau**, an American author; born in Massachusetts, in 1840; died in 1899.

**Palmer, Ray**, an American clergyman and hymnologist; born in Little Compton, R. I., Nov. 12, 1808; was graduated at Yale in 1830, and entered the Congregational ministry; was secretary of the Congregational Union in New York city in 1866-1878; will be remembered by the hymn, "My Faith Looks Up to Thee." He died in Newark, N. J., March 29, 1887.

**Palmer, William Pitt**, an American poet; born in Stockbridge, Mass., Feb. 22, 1805. He died in Brooklyn, N. Y., May 2, 1884.

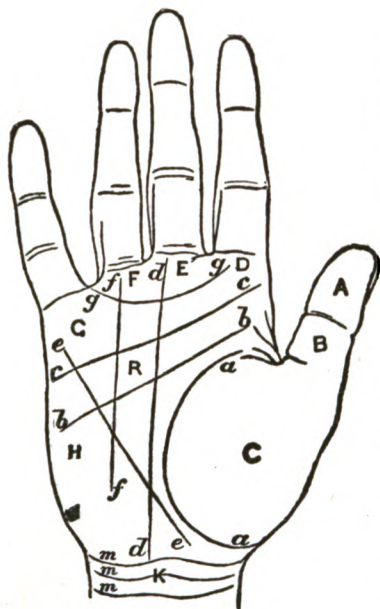
**Palmerston, Henry John Temple, Viscount**, an English statesman; born in 1784. In 1809 he was appointed Secretary of War, and in this office he remained through the various Tory administrations for nearly 20 years. Beginning with the Crimean War Lord Palmerston reached the apex of power as First Lord of the Treasury, and prime minister of Great Britain. As prime minister he successfully carried out the policy of alliance with France and the war with Russia, which ended with the fall of Sebastopol, in September, 1855. He was prime minister also during the American Civil War, and showed a decided leaning towards the Confederate cause. He was very popular with the masses, his politics being essentially national rather than partisan. As a debater, he was witty and often brilliant. He died Oct. 27, 1865.

**Palmetto**, a fan palm growing in the West Indies, Bermuda, and the S. part of the United States. Its leaves are woven into hats, like those

made of chip. The trunks form good stockades, and were used for the purpose during the War of Independence.

**Palmetto State**, South Carolina. On its coat of arms is a delineation of one of these trees, for the growth of which the State is famous.

**Palmistry**, or **Chiromancy**, the art which professes to discover the temperament and character of anyone,



PALMISTRY.

A, will; B, logic; C, mount of Venus; D, mount of Jupiter; E, mount of Saturn; F, mount of Apollo; G, mount of Mercury; H, mount of Mars; I, mount of the Moon; K, the rascette; a, a, line of life; b, b, line of the head; c, c, line of heart; d, d, line of Saturn or fate; e, e, line of liver or health; f, f, line of Apollo or fortune; g, g, the girdle of Venus; R, the quadrangle; m, m, m, bracelets of life.

as well as the past and future events of his life, from an examination of the

palm of his hand; and of the lines traced upon it.

**Palm Oil**, palm butter; a fat obtained from the fruit of certain kinds of palm, and imported into the coast of Guinea. It has the consistence of butter, an orange color, a smell resembling violets, and consists mainly of tripalmitin, with a little olein.

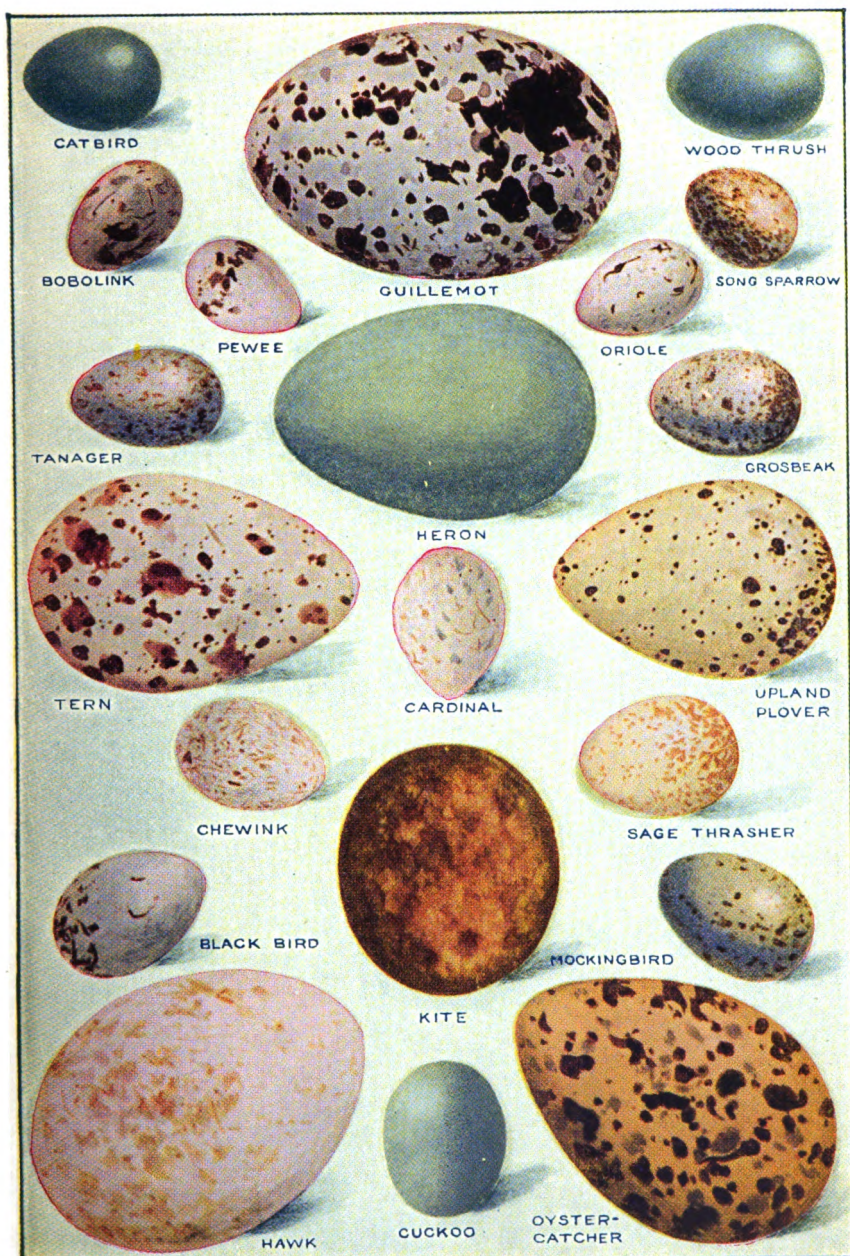
**Palm Sunday**, the Sunday immediately preceding Easter. It commemorates the triumphal entry of Jesus into Jerusalem, when the multitude strewed palm "branches," or rather leaves, for the typical palms, like those of Palestine, have no branches.

**Palmyra**, an ancient city in a fruitful and well-watered oasis of the Syria desert. It was the Tadmor or Thadmor of the Hebrews; founded, or enlarged by Solomon, about 1001 B. C. Both its Greek name Palmyra, and its Hebrew name Tadmor, signify the city of palms, and the Arabs call it Tedmor. It submitted to the Emperor Hadrian in 130 and rose to its highest power in the 3d century. Sapor I., King of Persia, was defeated here by Odenathus in 262. Odenathus was murdered about 267, and his wife Zenobia assumed the title of Queen of the East. Her army having been defeated at Antioch and at Emesa, Zenobia was besieged in her capital by the Emperor Aurelian in 272. She attempted to make her escape, but was taken prisoner, and Palmyra surrendered in 274. The citizens slew the Roman garrison, and Aurelian destroyed Palmyra. It was restored by Justinian I. in 527, and again destroyed by the Saracens in 744. It was plundered by Tamerlane in 1400. It had an immense temple dedicated to the sun, of which 60 columns out of 300 still remain.

**Palo Alto**, the name of a plain in Southern Texas, 8 miles from Brownsville, where the first battle of the Mexican War was fought, May 8, 1846. Gen. Zachary Taylor was in command of the United States troops of 2,300 men, while the Mexicans, under General Arista, had about 3,500. The battle was fought principally with artillery and the Mexicans were defeated.

**Palolo**, an edible annelid, extremely abundant at certain seasons in the





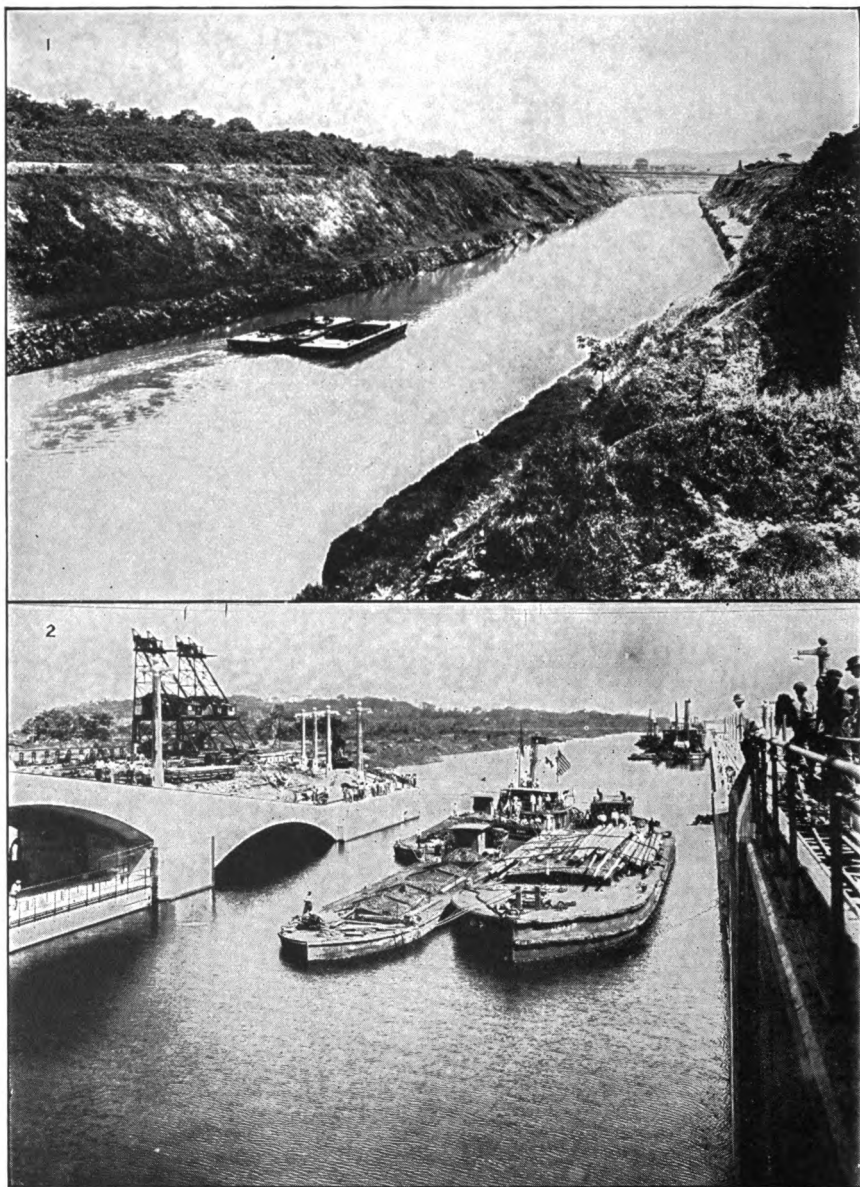
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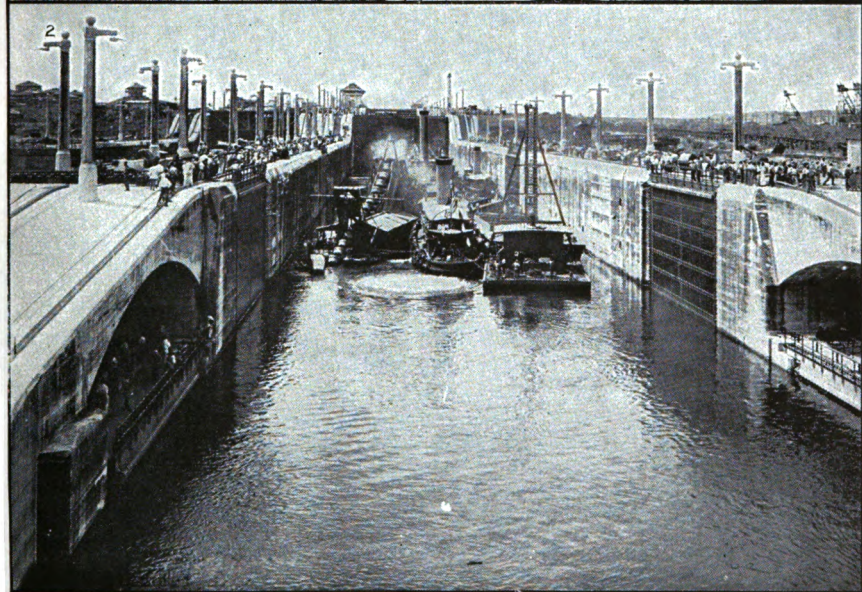
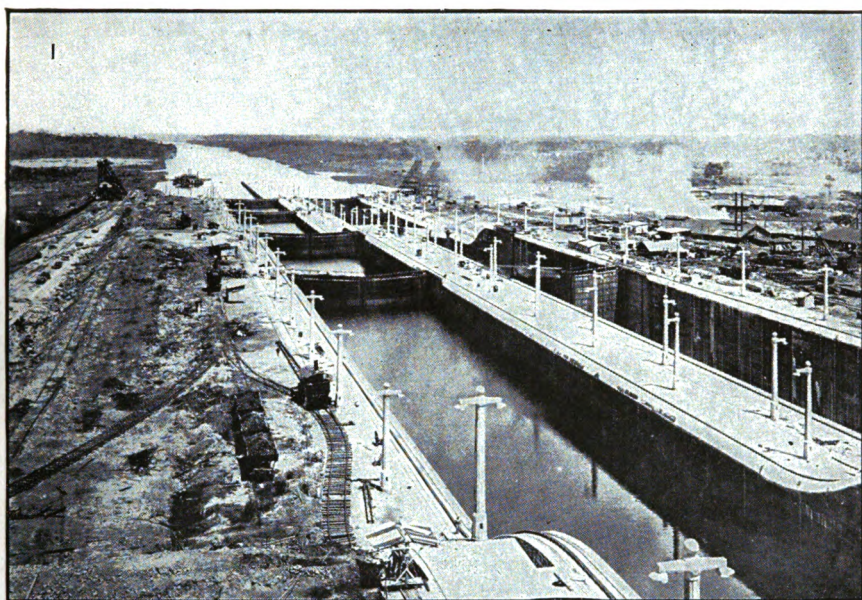
EGGS OF VARIOUS AMERICAN BIRDS



## THE PANAMA CANAL

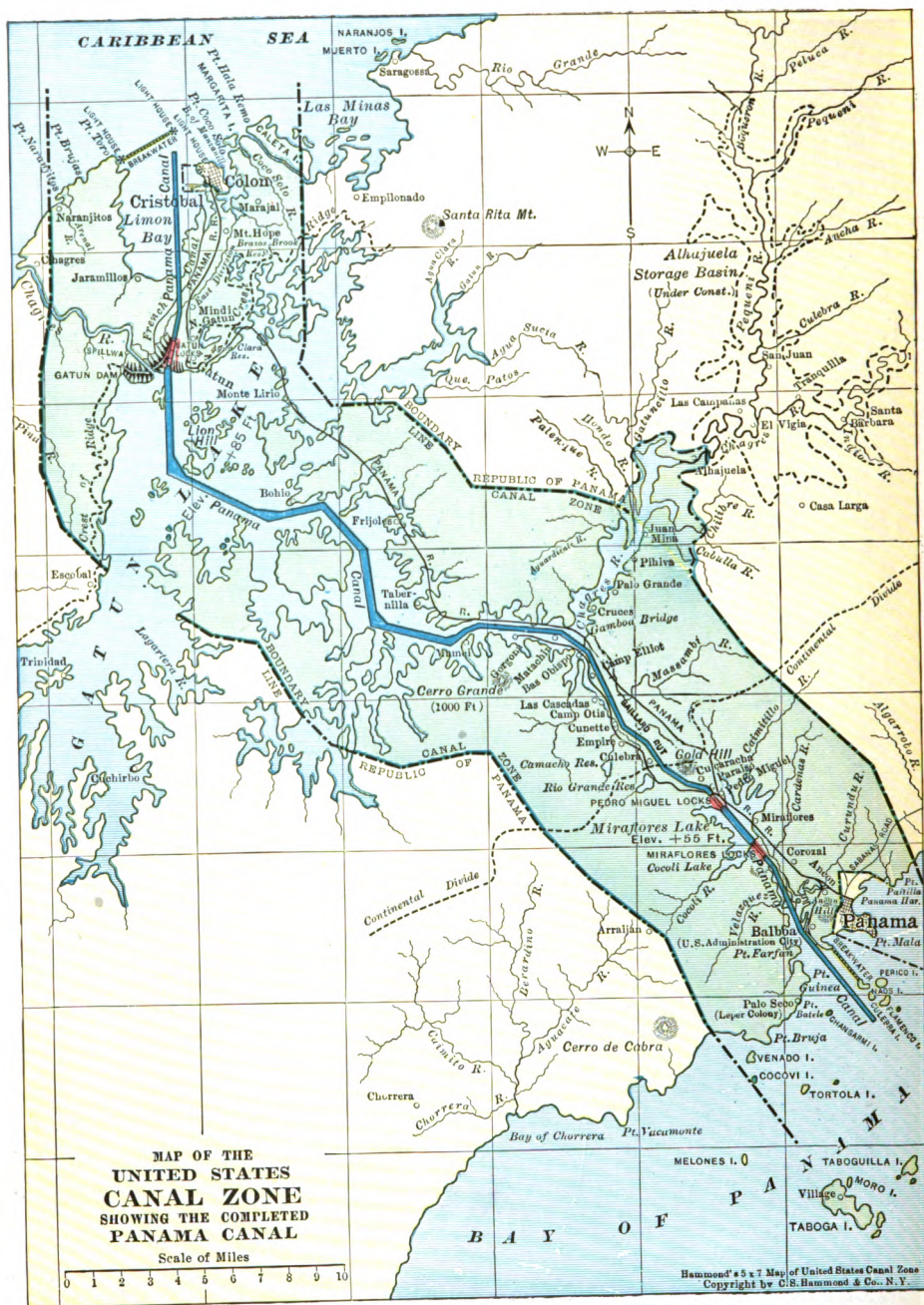


1—Culebra Cut, Finished. Water depth, 85 feet. 2—Dredging Fleet Entering Lower Gatun Lock



1—Middle and Lower Gatun Locks. 2—Upper Gatun Lock, Finished





sea above and near the coral reefs which surround many of the Polynesian Islands. They are eagerly sought after by the islanders, who are on the watch for their appearance, and go out in canoes before sunrise to take them by means of nets. After sunrise the creatures break into pieces and the shoals are not seen till the next period. The two stated periods are October and November.

**Palsy**, the loss of power of motion. It is a symptom of disease usually of apoplexy. There are six forms: Cerebral, spinal, epileptic, choreic, hysterical, and peripheral, their frequency being in the order named. Palsy is uncommon but serious in the young, and most common in advanced life. There are four modes of termination: (1) Death; (2) complete recovery with wasting muscles; (3) partial recovery with rigid muscles; (4) complete recovery..

**Pamirs**, The ("roof of the world"), the name given to that part of Central Asia where the frontiers of Russia, China, and Afghanistan adjoin. It forms the nucleus of the Central Asiatic highland system, uniting the Himalayas and the mountains of the Tian Shan range with the Hindu-kush, and is traversed by a number of mountain ridges interspersed with broad valleys, the average altitude of the intervening table lands being 13,000 feet, while several of the highest peaks exceed 25,000 feet above the sea.

**Pamlico**, a tribe of Indians living on the Pamlico river, in Beaufort co., N. C.

**Pamlico Sound**, a shallow lagoon of the United States, on the S. E. coast of North Carolina. It is 80 miles long, from 8 to 30 miles wide, and separated from the ocean by long, narrow, sandy islands.

**Pampas**, properly treeless pasture land covered with grass, but used more comprehensively for the whole tableland of South America, from the boundary of Brazil, where the regular seasons of the tropics cease, across the States of La Plata and Patagonia nearly to Cape Horn.

**Pamphlet**, a small book or treatise consisting of a few sheets of paper stitched together. Pamphlets seem to

have been first published in England in the 16th century during the Reformation controversy.

**Pamphylia**, anciently a country on the S. coast of Asia Minor, with Cilicia on the E. and Lycia on the W.

**Pan**, in Greek mythology, the god of shepherds, of huntsmen, and of all rural inhabitants. He was the son of Mercury, and was a monster in appearance, having two small horns in his head, a ruddy complexion, a flat nose; and his legs, thighs, tail, and feet were like those of a goat.

**Panama**, the capital of the Republic of Panama, formerly of a department of Colombia, on the Gulf of Panama, and on the Pacific coast of the Isthmus of Panama. The city lies on a tongue of land, across which its streets stretch from sea to sea. The harbor is shallow, but affords secure anchorage. Panama is chiefly important as the terminus of the interoceanic railway and also of the proposed Panama Canal. The railway, which has been in operation since 1855, runs across the isthmus from Panama to Colon on the Atlantic, and accommodates a large traffic. Pop. (1920) 66,851. The republic occupies the Isthmus of Panama, excepting the Canal Zone. Its prosperity depends upon its favorable geographical position, which facilitates transit from the Atlantic to the Pacific. Area, 32,380 square miles. Pop. (1923) 442,522.

**Panama Canal and Zone**. The immense importance to shipping of a canal connecting the Atlantic with the Pacific oceans was obvious to engineers and commercial authorities even before last century. Numerous surveys of the Panama isthmus were made but a really serious start to begin this enterprise came first with the proposal contained in the Bulwer-Clayton Treaty, April 19, 1850. An interoceanic railway was opened in 1855. The success of the Suez Canal, opened by de Lesseps in 1869, gave the French nation as well as M. de Lesseps, its engineer, incentive to undertake and finance a canal, which was, after much international negotiation, begun in 1881. Excavation continued, with enormous loss of life from fevers, till 1887; then, after the immense expenditure of about F 60,000,000 (approx. \$11,580,000.00), more funds were needed. Liquidation

## **Panama Canal**

was proposed the following year, work having been suspended. When the U. S. Government developed a project to build a canal at Nicaragua, the French company offered its far from completed work, together with the rights obtained by treaty with Colombia. In 1902, after Gt. Britain had renounced its Clayton-Bulwer Treaty, President Roosevelt obtained a bill (June, 1902) authorizing him to purchase the French rights for \$40,000,000. Difficulty over the purchase of rights from Colombia detained matters until (Nov. 3, 1903) the people of Panama revolted and formed the Republic of Panama. The Panama Treaty was then negotiated, Panama receiving the \$10,000,000 Colombia had refused; the French company received the \$40,000,000 it had offered the works and rights for. The Panama Treaty purchases only a perpetual right of occupation of the canal and contiguous "Zone," but title to the territory remains with the Republic of Panama. Annual payment of \$250,000 to the Republic is included so long as the occupation lasts. The United States and Colombian Congresses, in 1921, ratified a treaty by which Colombia receives \$25,000,000 (in \$5,000,000 yearly instalments) for loss of territorial sovereignty. By the 1903 treaty and the supplemental Taft agreement the U. S. acquires the right of construction and a 5-mile strip of land (Canal Zone) on either side, also the terminal cities Cristobal (near Colon) and Balboa (near Panama) and the islands in the bay for defense purposes. Jurisdiction over sanitary measures and quarantine in the cities of Colon and Panama rests with the U. S. A. In 1924 the Taft agreement was abrogated and supplanted by a commercial treaty in 1926. By it Panama will cooperate in canal defense and the U. S. is accorded radio and aviation control in Panama.

Remarkably efficient sanitary measures carried out by the U. S. Navy Department before and during construction of the Canal reduced local sickness (through yellow fever, malaria, etc.) in phenomenal measure. The French companies had excavated 78,000,000 cubic yards of earth, much of it uselessly. And 232,000,000 cubic yards had to be removed. Including fortifications, the Canal has cost about \$400,000,000. On Aug. 15, 1914, official opening of the Canal took place. The

## **Pan-American Exposition**

Canal has a length of 44.08 nautical miles from deep water at each ocean. Starting at sea level in Limon Bay to Gatun (6¾ miles), three pairs of locks form steps to Gatun Lake (85 feet above sea level). Damming the Chagres Valley formed the source to supply the lake. The Canal proceeds 23¾ miles to Gamboa, where starts the real drive (the famous Culebra Cut) through the divide. The Cut is 8 miles long with 300 feet bottom width. It extends to Pedro Miguel lock and dam on the Pacific slope. A lock now lowers the vessel to Miraflores Lake, whose surface is 55 feet above the sea. The Miraflores locks at the south end of the lake lower the vessel, by two steps, to the Pacific. An 8-mile long channel goes past Balboa to the Pacific. Minimum channel depth is 41 feet (80 feet deep in parts of Gatun Lake), and the lock chambers have a clearway of 110 feet width by 1,000 feet length. In 1929, 6,430 ships (17.62 daily average) passed through the canal yielding toll collections of \$27,592,150, a new high record. Since its opening in 1914, the canal has yielded \$388,000,000 in tolls from 54,021 ships. This figure is within about \$50,000,000 of the original investment. The estimated present capacity of the canal is about 50 ships daily.

**Pan-American Conference**, an assemblage of delegates from all the governments of South and Central America, convened at Washington in 1889-1890, at the instance of James G. Blaine, then Secretary of State. The propositions adopted included a great N. and S. trunk railway; government subsidies for steamship lines; uniform protection for literary and art property, trade-marks, and patents; uniform quarantine regulations; a uniform extradition treaty, and a great international bank. A second conference met in the city of Mexico, Oct. 22, 1901; a third at Rio Janeiro, June 22, 1906.

**Pan-American Exposition**, a fair held in Buffalo, N. Y., from May 1 till Nov. 3, 1901. It was distinctively an American exposition, the exhibits from the various States of the Union and of South and Central America being unusually full. Power for the electrical exhibit, the finest ever given, was derived from Niagara Falls. Over 5,000 horse power, and



## Pan-American Union

200,000 incandescent lamps were used. Financially the exposition was a failure.

**Pan-American Union**, formerly the INTERNATIONAL BUREAU OF AMERICAN REPUBLICS, an organization established in Washington, D. C., on a recommendation of the First Pan-American Conference, in 1889-90, and reorganized with enlarged scope by the conferences of 1906 and 1910. Its basic purpose is the conservation of close relations of commerce and friendship between the American republics. It is sustained by contributions from the republics in proportion to their population, and is governed by a board composed of their diplomatic representatives in Washington and the United States Secretary of State. The Union publishes monthly bulletins on the varied interests of the republics, conducts a vast correspondence on commercial lines, and maintains the Columbus Memorial Library.

**Panay**, one of the Philippine islands, belonging to the Visayan group; comprises the provinces of Antique, Capiz, Iloilo, and Concepcion; area, 4,611 square miles; pop. (Est.) 800,000.

**Pandora**, the first mortal female, according to Hesiod. She was made by Vulcan out of clay, at the command of Jupiter, who wished to punish the impiety of Prometheus by giving him a companion. When the statue was animated, each god and goddess bestowed on her some special charm, while Jove himself presented her with the "Pandora's box," which could be only opened by the mortal she selected for her husband. Mercury carried her to earth, and presented her to the notice of Prometheus, who declined the alluring bribe, and refused the offer. His brother, captivated by Pandora's charms, eagerly asked for and obtained the lovely Pandora for his wife, upon which she presented him with the casket. When Epimetheus, the husband, opened the lid, all the ills and mischiefs that afflict mankind flew out and spread themselves over the world; and the consequences would have been still more fatal, had there not been Hope at the bottom.

**Pandours**, a people of Servian origin who lived scattered among the mountains of Hungary, near the village of Pandour in the county of Sohl. The name is now obsolete.

## Pan-Presbyterian Council

**Pangolin**, scaly ant-eater; the popular name for any individual of the genus *Manis*. They range in size from one foot to three feet in length, exclusive of the tail, which, in some species, is twice as long as the body; legs short, ears very small, tongue long and vermicular, to which ants are held fast by the copious flow of saliva with which it is lubricated. There are seven species, three from Asia and four from Africa.

**Panhandle, The**, a descriptive designation popularly given to the N. extremity of the State of West Virginia; a somewhat elongated strip of territory between the W. frontier of Pennsylvania and the Ohio river. Also the N. W. projection of Texas.

**Panini**, the greatest known grammarian of ancient India, whose work has up to the present day remained the standard of Sanskrit grammar. Of his life little is known save that he was born near Attock. His date even has not been ascertained.

**Panorama**, a painting of a complete scene, viewed from a central point, or made continuous on an unrolling canvas, as if the spectator were passing the particular spots consecutively.

**Panos**, a tribe of Indians in Peru who were formerly very numerous. During the 17th century the missionaries persuaded many of them to gather in the mission villages. They were of a rather low grade, but understood hieroglyphic writing on bark. When the missions were broken up, in 1767, most of the Panos returned to their savage life, forming numerous small tribes. They have always been friendly to the whites.

**Pan-Presbyterian Council**, a body composed of all of the various branches of the Presbyterian and the Reformed Churches throughout the world, including the Cumberland Presbyterian, the United Presbyterian, the Scotch Presbyterian, the Dutch Reformed, the German Reformed, the Reformed Presbyterian, the Waldenses, the Huguenots and all other adherents of the Calvinistic faith. They represent about 35,000,000 communicants, located in 20 nations in different parts of the world, not including the missionary stations. The al-

**Pance** is the largest regularly established religious organization in existence. It meets once in four years, and was organized chiefly by the late Dr. James McCosh and the late Dr. Philip Schaff. Its first meeting in the United States was in Philadelphia in 1880. It has no ecclesiastical power or authority. It cannot alter the canons or affect the discipline of the church, but is simply intended to promote fellowship, interest and enthusiasm among the believers in the Calvinistic doctrines.

**Panslavism**, a project or movement for the union, in one confederacy, of all the Slavic races, politically and socially.

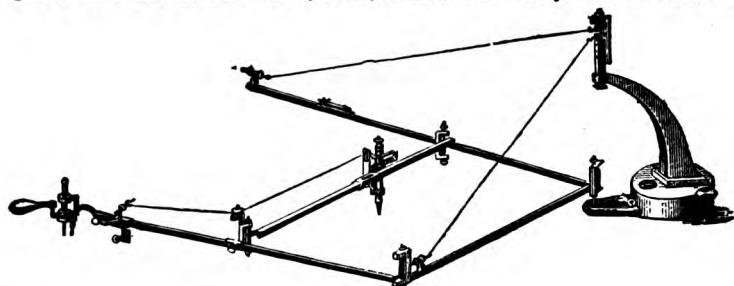
**Pantheism**, the view that God and the universe are identical. It was taught in India in the Vedantic system

be identical with, or a mere variety of the leopard. The name panther is given to the puma in America.

**Pantograph**, or **Pantagraph**, an instrument used in copying plans, maps, and other drawings, so that the copy may be either similar to, or larger or smaller than the original.

**Pantomime**, a theatrical representation, in which the entire plot is exhibited by gesticulations and scenic agency, without speeches or conversation.

**Paoli, Pasquale**, a Corsican patriot; born in 1726. In 1755, being invited by the Corsicans to become their captain-general, he put himself at the head of his countrymen, and, during 12 years, waged a fierce war with the Genoese, who were in the end driven from almost every fort in the island.



PANTOGRAPH.

of philosophy, one of the six leading schools of thought, and to this day it is widely accepted, both by the instructed Brahmins and by the common people.

**Pantheon**, a famous temple at Rome, built by M. Agrippa, son-in-law of Augustus, about 27 B. C., and dedicated to Mars, and Jupiter the Avenger, in memory of the victory obtained by Augustus over Antony and Cleopatra. The Pantheon is now commonly called the Rotunda, from its circular form. There is an excellent cast of the Pantheon in the Metropolitan Museum of Art, New York city.

**Panther**, one of the cat tribe, of a yellow color, diversified with roundish black spots, a native of Asia and Africa. The panther is now supposed to

Genoa, however, gave up the island to France in 1765; and soon afterward a large force was landed, under the command of Count Marbœuf, against whom Paoli and his followers fought desperately. But the Corsicans being totally routed at Pontenuovo, the island submitted. Paoli went to England, where he remained till 1789, in which year, Mirabeau having moved in the National Assembly the recall of all Corsican patriots, Paoli repaired to Paris, and was created by Louis XVI. military commandant in Corsica. While the government of France was monarchical, Paoli remained faithful; but, at the outbreak of the Revolution, he conceived a scheme for making Corsica an independent republic. Till this time he had been on the best terms with the Bonaparte family, but

they now joined the Jacobin party, while he allied himself with Great Britain, favored the landing of 2,000 British troops in the island in 1794, and joined them in driving out the French. He then surrendered the island to George III., but becoming dissatisfied with the government, he quarreled with the British viceroy, while many of his countrymen were displeased with the course he had adopted in allying himself with the British. He, therefore, left the island in 1796, and went to London, where he died in 1807.

**Papa**, the Latin form of the title now, in the Western Church, given exclusively to the Bishop of Rome. Originally meaning simply "father," it was given indiscriminately to all bishops. It is the title still given to priests of the Greek Church.

**Papal States.** See CHURCH, STATES OF THE.

**Papaw**, a small South American tree which has now been introduced into many tropical and subtropical countries. The fruit is eaten either raw or boiled. The seeds when chewed have in a high degree the pungency of cresses. The powdered seeds and the juice of the unripe fruit are most powerful anthelmintics. The juice of the fruit and the sap of the tree render tough meat tender, even the exhalations from the tree have this property, and joints of meat, fowls, etc., are hung among its branches to prepare them for the table. It bears fruit all the year, and is exceedingly prolific.

**Paper**, a material made in thin sheets from a pulp of rags, esparto grass, straw, wood or other fibers, and used for writing or printing on, or for wrapping. The earliest paper was doubtless that made from the Egyptian papyrus, whence all similar writing material is named. In the paper trade, as in other mechanical industries, there has been great progress made in the last half century. Chemists have furnished improved methods for washing bleaching and coloring the paper stock; while the mechanical improvements also have been many, both for boiling, running out, drying and finishing the pulp. The vegetable substances from which paper can be made are innumerable. The best

sources of fibre are linen and cotton rags for white paper, and hempen cordage for brown; but rags are no longer available in sufficient quantities for paper making, and not all woody fibre is equally well adapted for the production of paper; moreover many vegetable growths yield cellulose at such cost as to be unremunerative. A caustic soda or soda-ash is required in the preparation of many fibres.

In 1690, William Rittenhouse built the first paper mill in the United States near Germantown, Pa., but development was slow and it was not until about 100 years later that the industry found its place in the commercial world. Paper making in quantities is confined to Europe and North America.

The paper production in the United States has increased enormously in recent years. The total production in 1927 was 9,703,496 tons. Of this amount 1,485,495 was newsprint, 1,376,000 tons of book stock, 3,577,000 tons of board stock, 1,520,000 tons of wrapping paper, 515,000 tons of writing paper, 310,000 tons tissue paper, 118,000 tons wall paper, 582,000 tons felt and building paper, 70,000 tons blotting paper, and 26,000 tons of cover stock.

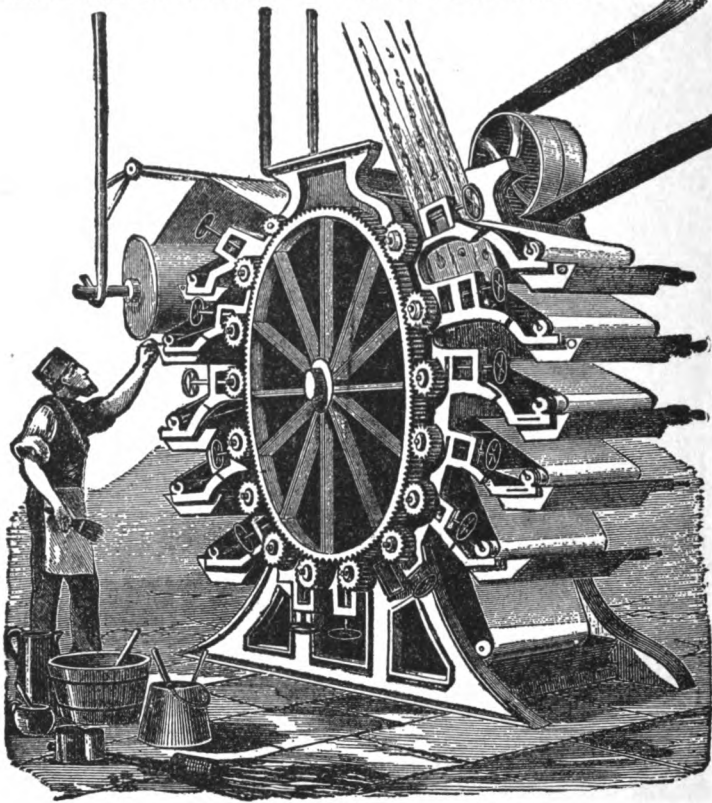
The imports for the year 1927 amounted to \$149,365,343 for paper and paper manufactures, and the exports \$26,975,670.

**Papier-mache**, a material composed principally of paper. The commoner varieties are prepared by pulping any kind or mixture of different kinds of paper into a homogeneous mass of a doughy consistence. Some earthy material may be mixed with the pulp, as well as chemicals, resinous substances, and glue to harden it and prevent the attacks of insects. The pulp is rolled into thick sheets, and sufficient quantity is taken to form the article of ornament desired; this is subjected to heavy pressure between cameo and intaglio dies and afterward dried. Its surface may now be gilded, painted with oil of size colors, or varnished. The toughness and lightness of this material peculiarly adapt it for table ware, table and desk furniture, interior architectural and other ornaments.

**Papilla**, in anatomy, small eminences, more or less prominent, at the

surface of several parts, particularly of the skin and mucous membranes, containing the ultimate expansions of the vessels and nerves, and are susceptible in some cases of a kind of erection. In botany, a small, elongated, or nipple shaped protuberance.

"Ninety-two Resolutions" which were not accepted by the English government. The alliance of his interests with those of William Lyon Mackenzie resulted in his flight to the United States from where he returned to Canada in 1847. Died in 1871.



MACHINE FOR PRINTING WALL PAPER.

**Papineau, Louis Joseph**, a Canadian politician, born at Montreal, Canada, in 1789. Educated at the Seminary of Quebec where he prepared for the practice of law. In 1809 and 1811 members of the Legislature of Lower Canada, served as captain in the War of 1812, collaborated on the famous

**Papin, Denis**, a French physician; born in Blois, France, in 1647. To Papin undoubtedly belongs the high honor of having first applied steam to produce motion by raising a piston; he combined with this the simplest means of producing a vacuum beneath the raised piston, viz., by condensa-

tion of aqueous vapor; he is also the inventor of the "safety-valve," an essential part of his "digester." By this latter machine, Papin showed that liquids in a vacuum can be put in a state of ebullition at a much lower temperature than when freely exposed to the air. Papin's sagacity led him to many other discoveries; he discovered the principle of action of the siphon, improved the pneumatic machine of Otto de Guericke, and took part against Leibnitz in the discussion concerning "living" and "dead" forces. He died in 1714.

**Papion**, a species of dog-headed baboon, akin to the mandril. It was held in great reverence in Egypt, selected individuals being kept near the temples, in the caves of which their mummied forms have been often found.

**Papyrus**, the plant from which the ancients made paper. It has an underground stem, at intervals sending up ordinary stems 8 or 10 feet high. It grows on the banks of the Nile, the Jordan and in the S. of Italy. The paper was made from thin slices of the stem cut vertically. It was made also into boats, and its fibers used for cordage. In literature, rolls of papyrus with writings on them constituting an ancient book. Many such papyri have been found at Herculaneum and Pompeii, the former partially legible, the latter wholly obliterated.

**Par**, a word used to denote a state of equality or equal value. Bills of exchange, stocks, etc., are at par when they sell for their nominal value, above par or below par when they sell for more or less.

**Parable**, a comparison, a similitude; specifically a fable or allegorical relation or representation of something real in life or nature, from which a moral is drawn for instruction. It differs from an apologue, in that it relates or represents things which, though fictitious, might happen in nature. An allegorical or mystical saying or expression; a proverb.

**Parabola**, in conic sections, a plane curve of such a form that if from any point in the curve one straight line be drawn to a given fixed point, the other perpendicular to a straight line given in position, these two straight lines will always be equal

to one another. The given fixed point is called the focus of the parabola.

**Paracelsus**, a German theosophist, physician, and chemist; born in Einsiedeln, near Zurich, Germany, in 1493. His real name was Philip Theophrastus Bourbast von Hohenheim, but he assumed the high-sounding name of Aureolus Theophrastus Paracelsus. He learned the rudiments of alchemy, astrology, and medicine from his father, and then became a wandering scholar, visiting almost all parts of Europe. The greater part of his life was spent in roving from place to place, practising medicine, indulging in low habits, and writing his books, which were published in 10 volumes. Notwithstanding all his faults, errors and absurdities, Paracelsus gave a new direction to medical science, by his doctrine that the true use of chemistry is not to make gold, but to prepare medicines; and from his day the study of chemistry became a necessary part of medical education. He died in Salzburg, in 1541.

**Parachute**, an umbrella-like device about 20 to 25 feet in diameter, used by aviators to assure safe descent from an airplane or balloon. Is generally worn folded or packed on the lower part of the back, and secured by means of straps over the shoulders and between the legs. In case of a forced descent, the aviator falls or drops through space for about four seconds, then he pulls a ring which releases the parachute proper.

**Paradise**. In Scripture, in the authorized version, the word paradise does not occur in the Old Testament. The word paradise occurs three times in the authorized version of the New Testament. It was the place to which Jesus and the penitent thief went the day that they died. St. Paul was caught up into it, and identified it with the third heaven. With analogies still preserved to the earthly Eden, the tree of life is in its midst. In theology, paradise is generally used to mean heaven, the place of the blessed.

**Paradiseidae**, birds of paradise; a family of passerine birds, "formerly restricted to about eight species of the more typical paradise birds, but in his splendid monograph of the group, Eliott has combined together a number



## Paradise Fish

of forms which had been doubtfully placed in several adjacent families." The family differs from the *Corvidae*, to which it is closely allied, in the outer being shorter than the middle, and longer than the inner toe, the hind toe being very large and equaling the middle in length.

**Paradise Fish**, a popular name for a fish from the East Indian Archipelago. Its coloration is brilliant and it is frequently found in aquaria.

**Paradox**, a tenet or statement contrary to received opinion; an assertion which is contrary to appearance, and seemingly absurd, impossible, or at variance with common sense, but which may, on examination, be found to be perfectly correct and well founded.

**Paraffin**, or **Paraffine**, a solid fatty substance, produced along with other substances in the dry or destructive distillations of various organic matters, such as coal, bituminous shale, lignite, peat, etc., at a low red heat. It is found along with liquid oils in petroleum, and in the native state in coal and bituminous strata, known as fossil wax, ozokerite, etc.

**Paraguay**, a large river of South America. The entire length of the river is estimated at 1,800 miles; it is on an average about half a mile in width, and is navigable for steamers to the mouth of the Cuyaba, 100 miles above the town of Corumba.

**Paraguay**, a republic of South America; bounded on the N. and N. E. by Brazil, on the S. S. E. and S. W. by the Argentine Republic, and on the N. W. by Bolivia; area of Paraguay proper, which lies between the Paraguay and Alto Parana rivers, is estimated at 65,000 square miles. An area of upwards of 100,000 square miles, lying between the Paraguay and Pilcomayo rivers, known as the Chaco, is claimed by Paraguay, whose rights are disputed by Bolivia. Pop. (1928 Est.) 828,969, including 30,000 Chaco Indians.

A mountain chain called **Sierra Amamboy**, running in the general direction of N. to S., and bifurcating the E. and W. toward the S. extremity, under the name of **Sierra Maracayu**, divides the tributaries of the Parana from those of the Paraguay.

## Paraguay

The N. portion is in general covered by low, gently-swelling ridges, separated by large grass plains, dotted with palms. There are mountains in the N. E. and N. W. corners. The S. portion is one of the most fertile districts of South America, consisting of hills and gentle slopes richly wooded, of wide savannas, which afford excellent pasture ground, and of rich alluvial plains, some of them marshy, or with shallow pools of water, but a large proportion are of extraordinary fertility and highly cultivated.

The climate is temperate, reaching as high as 100° in summer, but in winter being generally 45°. In 1914 the estimated number of horned cattle was about 3,500,000. The meat-packing and curing industry is promoted by the government, and hides, jerked beef, and other animal products are exported. Paraguay tea, or yerba, a natural product of the forests, was exported in 1927 to the amount of 7,931 tons. There was also exported 391,538 hides, 123,280,000 oranges, 16,697,000 mandarins, and 4,478 tons of tobacco. The exports for 1927 totaled \$11,977,765, and the imports \$14,282,040.

On Nov. 25, 1870, a new constitution was proclaimed. There is a Congress composed of a Senate and a House of Deputies. The members of both houses are elected by popular vote at the ratio of one senator for every 12,000 inhabitants, and one representative for every 6,000 inhabitants. The executive authority is vested in a president, whose term of office is four years. There are five departments in the president's cabinet, viz., Interior, Finance, Justice and Worship, War, and Foreign affairs.

Paraguay was discovered by Sebastian Cabot in 1526, but the first colony was settled in 1535 by Pedro de Mendoza, who founded the city of Asuncion. In 1810 Paraguay declared itself independent of Spain, and from that time to the present has existed as a republic ruled by dictators or presidents, some of whom have really been great despots. The inhabitants of the towns consist chiefly of whites, or of half-breeds, speaking Spanish. The native population of the provinces

## Parallax

are chiefly Guaranis, speaking the Guaraní language. In 1865-1870 Paraguay was at war with the combined forces of Brazil, the Argentine Confederation, and Uruguay, and as a result of that struggle lost much territory and many inhabitants, and came virtually under the guardianship of the victors.

**Parallax**, the difference of direction of a body as seen from two different points. It is generally applied to the direction of the heavenly bodies as seen from the earth's center and from some point of its surface. The parallax is greater the nearer the body and the greater the distance between the points in a direction at right angles to that of the body. The term is also applied to the difference in direction of a body seen from different points of the earth's orbit, the longest diameter of which is insufficient in case of some fixed stars.

**Parallel Lines**, two straight lines are parallel to each other when they lie in the same direction. It follows from this definition, (1) that they are contained in the same plane; (2) that they cannot intersect how far soever both may be prolonged. Any number of straight lines are parallel to each other when they have the same direction, or when they are respectively parallel to a given straight line.

**Paralysis**, the loss of the natural power of sensation or motion in any part of the body. It is owing to some diseased condition of the nervous system, either of the brain or spinal cord, or of the nerves. If the nerves of sensation or their centers be affected, there will be loss of sensation; if of motion, then loss of motion; to the latter of which the term paralysis is by some exclusively applied. Each of these kinds may again be general or partial, or may have various degrees of severity. It may affect only one nerve or muscle, or it may affect a number. The most usual form is when one side or half of the body is deprived of sensation or motion, or both, called hemiplegia; paraplegia is when the lower part of the body is paralyzed, while the upper retains both sensation and motion; and general paralysis is when the loss of nervous power extends over nearly every part of the body.

## Parasite

**Paramaribo**, the capital of Dutch Guiana, on the Surinam, about 10 miles from its mouth. It has broad, tree-shaded streets, with clean wooden houses, painted light gray, and numerous canals and churches. There are also a governor's palace, two forts, a park, etc. The Herrnhuters (Moravian Brethren) are a strong body in the town. Except for the small harbor of Nickerie, all the trade is concentrated here. Pop. (1921) 41,773.

**Parana**, a river in South America, the largest except the Amazon, and draining a larger basin than any other river in the New World except the Amazon and the Mississippi. It is formed by the junction of two streams, the Rio Grande and the Paranahyba, which meet in Brazil, and it discharges itself into the estuary of the La Plata, its course latterly being through the Argentine Republic. Its length, from its sources to its junction with the Paraguay, is probably 1,500 miles, and thence to the sea 600 miles more. In breadth, current, and volume of water, the Parana has 10 times the magnitude of the Paraguay, which is itself superior to the greatest European rivers. It is an important waterway to the interior of the country.

**Paraphrase**, a free translation or rendering of a passage; a restatement of a passage, sentence, or work, in which the sense of the original is retained, but expressed in other words, and generally more fully, for the purpose of clearer and fuller explanation; a setting forth in ampler and clearer terms of the signification of a text, passage, or word.

**Parasite**, in botany, the parasites on plants are either animals or vegetables. Some of the latter are of high organization, as *loranthus* and *orobanche* among exogens, and epiphytal orchids among endogens. Many cryptogams, as certain ferns, mosses, lichens, and fungi, are parasites. The roots of the more highly organized parasites penetrate the substance of the herb at whose expense they feed, and take up from it nutrient substances already in large measure assimilated. The lower parasites, by means of their cells, penetrate other cells to live in and on them. The former are more destructive to the plant.

## Parasitic Diseases

In zoölogy, an animal which lives in, on, or at the expense of the actual substance of another. There is scarcely an animal which does not play the part of host to numerous parasites, and a very large number of the lower Invertebrata are parasitic at some stage of their existence.

**Parasitic Diseases**, diseases in which certain morbid conditions are induced by the presence of animals or vegetables which have found a place of subsistence within some tissue or organ, or on some surface of the body of man or other animals. Plants are not exempt from disorders of this nature.

**Parasitic Plants**, those which unable to nourish themselves, prey upon other plants or animals; becoming attached, they gain access to the tissues of their host and feed upon its juices. They are more or less degen-



RAFFLESIA HARRELLI.

erate, according to the extent of their parasitism. Any climbing plant is so far a parasite, but, not drawing any nourishment from its host, merely using it as a support, it can live without it, and is perfect in all its parts. Many parasites have probably developed from such plants. The mistletoe, on the other hand, has no roots in the ground; its seed is left by a bird on an apple or an oak tree, to which when it begins to grow, it becomes attached by means of special organs, which act as roots and enable it to draw crude sap, water, and salts from its host, and having green leaves it can absorb carbonic acid from the air, and elaborate food for its tissues.

Nearly all plant parasites have a marked preference for a particular species of host, and they are all flowering plants. But there are many

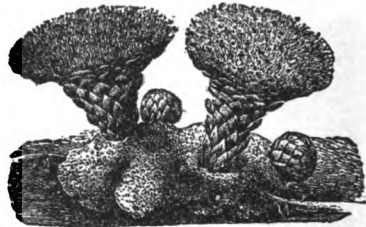
## Parasitic Plants

others; two whole classes, the bacteria and the fungi, are either parasitic or, what is much the same thing, saprophytic — i. e., dependent upon decay-



LORANTHUS EUROPAES.

ing organic matter for food. The bacteria have animals as their hosts, and cause in them many diseases, the species being often recognized by the disease. When they are saprophytic they cause fermentation and putrefaction. The fungi are many of them a



SCYBALIUM FUNGIFORME.

trouble in agriculture, causing corn, hop, and vine mildew, potato disease, and also salmon disease; others, like the mushroom, are saprophytes. Allied to parasitism is symbiosis, a sort of mutually arranged parasitism for the benefit of both parties; as in the

case of the lichens, which consist of algæ and fungi in partnership.

But the most important and interesting of the vegetable parasites are those belonging to the schizomycetes or bacteria, whose study has assumed such prominence that it is now almost an independent science. The relations of these organisms to their host are much more intimate than in the case of the larger parasites, and the problems presented by the disease associated with them are consequently much more difficult of solution; but in some cases the parasitic nature of these diseases has been completely established. Analogy makes it probable that some day all "specific febrile diseases" will have to be included in this group. See FUNGI.

**Parcels Post**, a system for the transmission of fourth-class mail matter, authorized by the Congress of the United States, and effective on Jan. 1, 1913. To facilitate the system the United States and its Territories and possessions, excepting the Philippine Islands, are divided into units or zones of area, each having a specified rate of postage, according to distance. The system also provides for insurance on articles so transmitted. In its first year the success of the system was far beyond anticipation, and on Dec. 6, 1913, approval was given to the proposal of the postmaster-general to increase the weight limit of parcels in the first and second zones from 20 to 50 pounds, to reduce rates in the third, fourth, fifth, and sixth zones, and to include books.

**Parchment**, the skin of a very young calf, sheep or goat, dressed and prepared as writing material, etc.

**Pardee, Ario**, an American philanthropist; born in Chatham, N. Y., in 1810. One of the pioneers of the Pennsylvania anthracite region, he amassed several millions as a coal operator. His donations to Lafayette College amounted to \$500,000. He was active in various charitable movements. He died March 26, 1892.

**Pardon**. The pardoning power is a prerogative of the sovereign power in a State, whether representative or monarchical. In the United States the pardoning power for offenses against the general government is vested in the President, the authority

being delegated by the people through the medium of the Constitution of the country. For offenses against the States the pardoning power is vested in the several governors, or in a few cases, the governor and State legislature, or one branch thereof, conjointly.

**Parecis**, a tribe or race of Indians in Brazil, formerly one of the most powerful in that region, but of whom only a few hundreds survive. They live in villages, farm their lands and are generally friendly to the whites.

**Paregoric**, the compound tincture of opium, benzoic acid, camphor, and oil of anise, every fluid ounce containing 2 grains each of opium and benzoic acid, and 1½ grains of camphor. This preparation is much used for coughs and colds.

**Parenis**, or **Parenas**, a tribe of Indians now practically extinct, who lived in Venezuela, on the Orinoco. They belonged to the Arawak or Maypure linguistic stock.

**Parent**, a term of relationship applicable to those from whom we immediately receive our being.

**Parenthesis**, a sentence or part of a sentence inserted in the middle of another sentence, with the subject of which it is cognate, but from which it may be omitted without impairing the grammatical construction or the substantial meaning. It is commonly marked off by upright curved lines ( ), but frequently also by dashes —.

**Parentintims**, a nomadic tribe of Indians of the Amazon valley. They subsist by hunting and fishing and by depredations on the plantations of other tribes. They are constantly at war with the Mundurucus.

**Parepa-Rosa, Madame** (Euphrosyne Parepa de Boyesku), a British operatic singer; born in Edinburgh, May 7, 1836; made her debut in Malta in 1855; first appeared in England in 1857 and in the United States in 1866. Her voice was a soprano of great power and compass and she was greatly admired in oratorio singing. She died in London, Jan. 21, 1874.

**Paria, Gulf of**, an inlet of the Atlantic on the N. E. coast of South America, between the island of Trinidad and mainland of Venezuela, in-

closed on the N. by the Peninsula of Paria. It possesses good anchorage, and receives some arms of the Orinoco.

**Pariah.** The lowest class among the people of Southern India. Hence a term applied to one utterly degraded and despised.

**Parian Marble,** a white, large-grained, and considerably translucent marble, called by the Greeks *lychnites*, from *lychnos* = light, because quarried by lamplight. It was the most celebrated statuary marble of antiquity, and was found in the island of Paros, also in Naxos and Tenos. The celebrated statues of the Venus de Medicis, the Venus Capitolini, etc., are made of this marble.

**Parima, or Parime Sierra,** a mountain range situated in the N. E. of Venezuela.

**Pari Passu,** with equal pace, steps, or progress. In law, a term signifying equally, in proportion; without undue preference; said especially of the creditors of an insolvent estate, who, with certain exceptions are entitled to payment of their debts in shares proportionate to the claims which they may have against the estate.

**Paris** (anciently, *Lutetia Parisiorum*), the capital of France and of the department of the Seine. The city lies in the Seine valley surrounded by heights. Through the valleys between these heights, the river runs from E. to W., inclosing two islands, upon which part of the city is built. It is navigable by small steamers. The quays or embankments, which extend along the Seine on both sides, being built of solid masonry, protect the city from inundation and form excellent promenades. The river, which within the city is fully 530 feet in width, is crossed by numerous bridges. The climate of Paris is temperate and agreeable. The city is divided into 20 *arrondissements*, at the head of which is a *maire*. Each *arrondissement* is divided into four quarters, each of which sends a member to the municipal council. The council discuss and vote the budget of the city. At the head is the prefect of the Seine and the prefect of police.

In the older parts of the city the streets are narrow and irregular, but in the newer districts the avenues are

straight, wide, and well paved. What are known as "the boulevards" include the interior, exterior, and military. That which is specifically called "The Boulevard" extends, in an irregular arc on the N. side of the Seine, from the Place de la Bastille in the E. to the Place de la Madeleine in the W. Its length of nearly 3 miles forms the most stirring part of the city. Here may be noted also the magnificent triumphal arches of Porte St. Denis and Porte St. Martin, the former of which is 72 feet in height. On the S. side of the Seine the boulevards are neither so numerous nor so extensive.

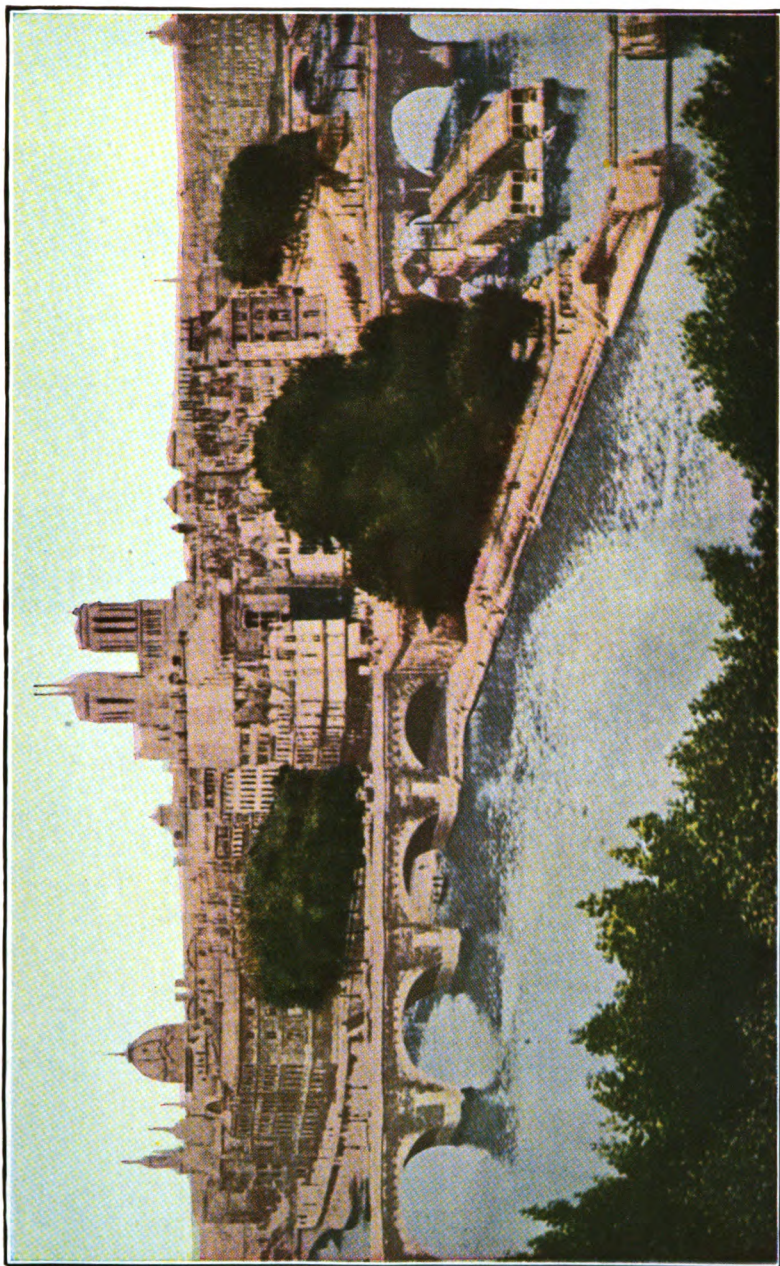
Among the many public squares or places is the Place de la Concorde, one of the largest and most elegant squares in Europe, surrounded by fine buildings and adorned by an Egyptian obelisk, fountains, and statues. But the most extensive parks are outside the city. Of these the Bois de Boulogne, on the W., covers an area of 2,150 acres, gives an extensive view toward St. Cloud and Mount Valerien, comprises the race courses of Long-champs and Auteuil, and in it are situated lakes, an aquarium, conservatories, etc. The Bois de Vincennes, on the E., even larger, is similarly adorned with artificial lakes and streams, and its high plateau offers a fine view over the surrounding country.

Of the churches of Paris the most celebrated is the cathedral of Notre Dame, situated on one of the islands of the Seine, called the Ile de la Cite. It is a vast cruciform structure, with a lofty W. front, flanked by two square towers, the walls sustained by many flying buttresses, and the E. end octagonal. The whole length of the church is 426 feet, its breadth 164 feet. The foundation of Notre Dame belongs to the 6th century; the present edifice dates from 1163; but was restored in 1845. The interior decorations are all modern.

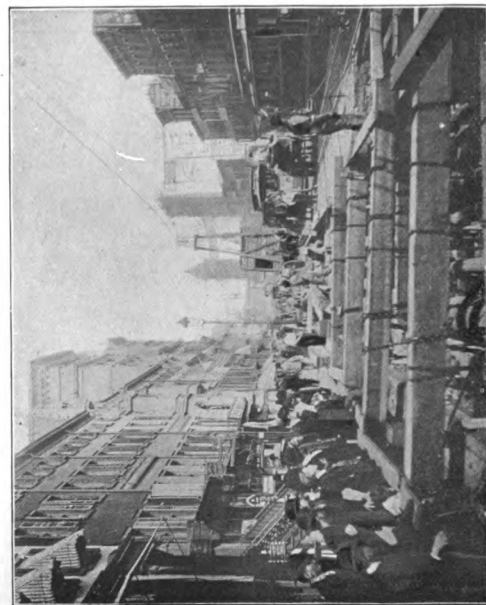
Notable among the public buildings of Paris are its palaces. The Louvre (q. v.), a great series of buildings within which are two large courts, is now devoted to a museum which comprises splendid collections of sculpture, paintings, engravings, bronzes, pottery, Egyptian and Assyrian antiquities,



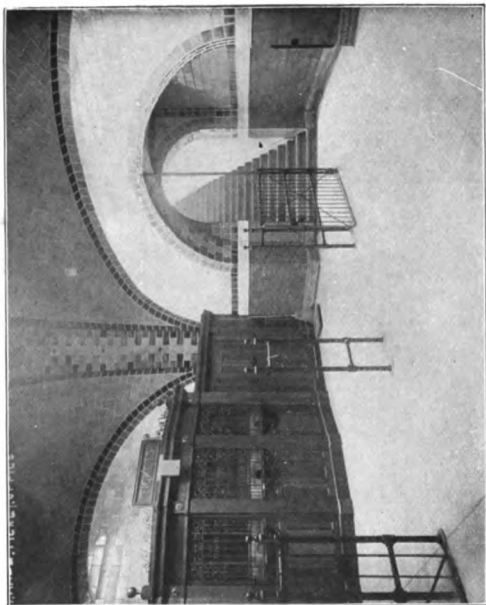
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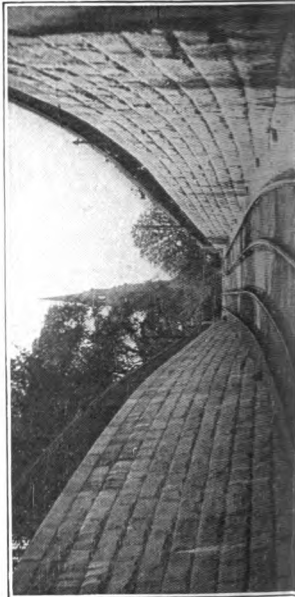
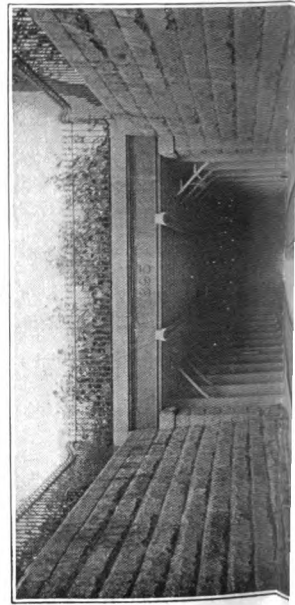
"LA CITE" THE ISLAND—CRADLE OF OLD PARIS



FIRST EXCAVATION FOR NEW YORK SUBWAY



NEW YORK SUBWAY STATION

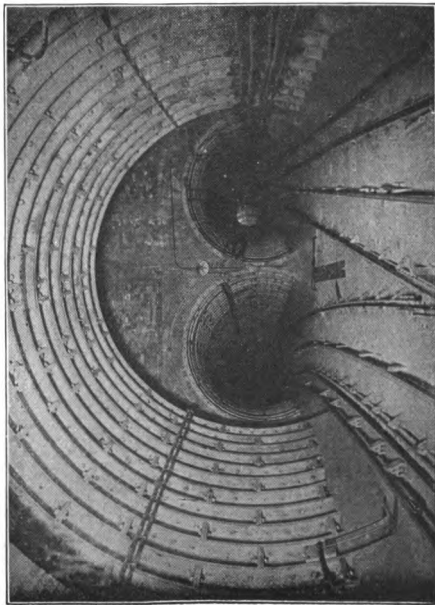




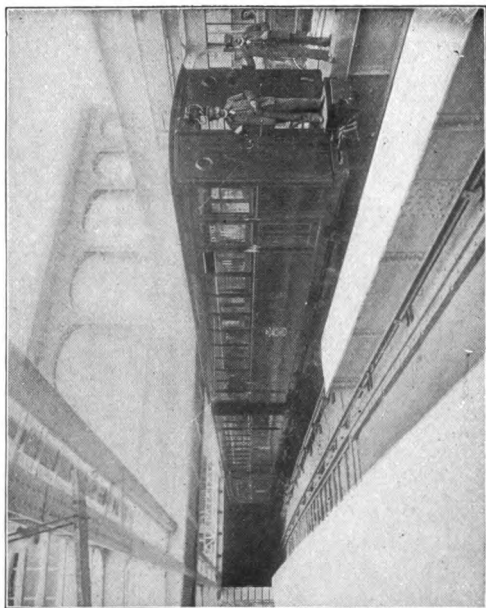
ENTRANCE TO BOSTON SUBWAY



EXIT FROM BOSTON SUBWAY



SECTION OF LONDON TUBES



PARIS UNDERGROUND RAILWAY AND TRAINS

## SUBWAYS





PILLARS OF THE PARTHENON AT SUNSET

## Paris

etc.; the palace of the Tuileries, the Palais du Luxembourg, the Palais Royal, the Palais de l'Elysee, and many others. A notable and unique structure is the Eiffel Tower (q. v.), built in connection with the Paris Exhibition of 1900, and which is to have a permanent existence. It is a structure of iron lattice-work, 984 feet high, and having three stages or platforms. It is as yet the highest building in the world.

The chief institution of higher education is the academy of the Sorbonne, where are the university "faculties" of literature and science, while those of law and medicine are in separate buildings. There are, besides, numerous courses of lectures in science, philology, and philosophy delivered in the College de France, and courses of chemistry, natural history, etc., in the museum of the Jardin des Plantes. There are numerous schools of secondary importance. The chief of the learned societies is the Institute of France.

The most important manufactures are articles of jewelry and the precious metals, trinkets of various kinds, fine hardware, paper hangings, saddlery, and other articles of leather, various articles of dress, silk and woolen tissues, particularly shawls and carpets, refined sugar, tobacco (a government monopoly), chemical products, etc. That which is distinctively Parisian is the making of all kinds of small ornamental articles, which are called articles de Paris.

According to approximate estimates the population of Paris was, in 1474, 150,000; under Henry II, (1547-1559), 210,000; under Louis XIV. (1643-1715), 492,600; 1856 (before annexation of parts beyond the old city limits), 1,174,346; 1861 (after annexation), 1,667,841; 1921, 2,906,471; and 1926, 2,887,429.

The first appearance of Paris in history is on the occasion of Cæsar's conquest of Gaul, when the small tribe of the Parisii were found inhabiting the banks of the Seine. It was a fortified town in A. D. 360, when the soldiers of Julian summoned him to fill the imperial throne. In the beginning of the 5th century it suffered much from the Northern hordes, and ultimately fell into the hands of the

## Paris

Franks. In 987 a new dynasty was established in the person of Hugh Capet, from whose reign downward Paris has continued to be the residence of the kings of France. In 1437 and 1438, under Charles VII., Paris was ravaged by pestilence and famine. Under Louis XI. a course of prosperity again commenced. In the reign of Louis XIV. the Paris walls were levelled to the ground after having stood for about 300 years, and what are now the principal boulevards were formed on their site (1670). Only the Bastille was left (till 1789), and in place of the four principal gates of the old walls, four triumphal arches were erected, two of which, the Porte St. Denis and Porte St. Martin, still stand. Many of the finest edifices of Paris were destroyed during the Revolution, but the work of embellishment was resumed by the directory, and continued by all subsequent governments. The reign of Napoleon III. is specially noteworthy in this respect; during it Paris was opened up by spacious streets and beautified to an extent surpassing all that had hitherto been effected by any of his predecessors. The city was besieged for 131 days by the Germans in the war of 1870-1871, and again by the French national government in order to wrest the city from the Commune which had wrought disastrous havoc to the chief buildings. Paris was the scene of international exhibitions in 1855, 1867, 1878, 1889, and 1900. In the World War, Paris was the great objective point in the Teutonic campaign, but the French troops, first under the venerable Gen. Joseph S. Gallieni, and later under the younger Gen. Joseph Joffre, saved the city, especially in the great battles of the Marne and Somme. See APPENDIX: *World War*.

**Paris, Declaration of.** In 1856 the representatives of the Powers agreed to four points in international law: (1) Privateering abolished; (2) the neutral flag covers enemies' goods, excepting contraband of war; (3) neutral goods, with the same exception, are not liable to be seized even under an enemy's flag; (4) blockades, in order to be binding, must be effective. The United States refused to accept the first point, because the Eu-



ropean Powers declined to affirm that hereafter all private property should be exempted from capture by ships of war.

**Paris, Louis Albert Philippe d'Orleans, Comte de**, son of the Duc d'Orleans, and grandson of Louis-Philippe; born in the Tuileries, Paris, France, Aug. 24, 1838. After the revolution of 1848 he resided chiefly in Claremont, England, where he was educated by his mother. During the American Civil War of 1861 he, along with his brother the Duc de Chartres, volunteered into the northern army, and served for some time on the staff of General McClellan. On his return to Europe the following year he married his cousin the Princess Marie-Isabelle, eldest daughter of the Duc de Montpensier. After the Franco-German War he was admitted a member of the first national assembly. The Comte de Paris was recognized as head of the royal house of France. Under the expulsion bill (1886) he was forbidden to enter France. He published a "History of the Civil War in America." Died 1894.

**Paris, Matthew**, an English historian; born about 1195; died 1259. He entered the Benedictine monastery of St. Albans, and in 1235 succeeded Roger of Wendover as chronicler to the monastery. He was very intimate with Henry III., and had a large number of influential friends besides. In 1248 he went on an ecclesiastical mission to Norway. He is characterized as at once a mathematician, poet, orator, theologian, painter, and architect. His principal work is his "Historia Major" (or "Chronica Major"), written in Latin, and comprising a sketch of the history of the world down to his own times, the latter portion (1235-59) being, however, the only part exclusively his; the "Historia Anglorum," called also "Historia Minor," a sort of abridgment of the former; and also "Lives of the Abbots of St. Albans," "Kings of Mercia," etc.

**Paris, Treaties of.** Of the numerous treaties bearing this designation a few only of the most important can be mentioned here. On Feb. 10, 1763, a treaty of peace was signed between France, Spain, Portugal, and England in which Canada was ceded to Great

Britain. On Feb. 6, 1778, was signed that between France and the United States, in which the independence of the latter country was recognized. The treaty for the conclusion of peace between Russia on the one hand, and France, Sardinia, Austria, Turkey, and Great Britain on the other, at the end of the Crimean War, was ratified March 30, 1856. The treaty of peace with Germany, at the end of the Franco-German War, was concluded May 10, 1871, and modified by the convention of Oct. 12, 1871. The treaty between Spain and the United States at the end of the Spanish-American War was concluded Dec. 10, 1898; was ratified by the United States Senate, Feb. 6, 1899; was signed by President McKinley, Feb. 10, 1899; and by the Queen Regent of Spain, March 17, 1899.

**Parish**, a district marked out as that belonging to one church, and whose spiritual wants are to be under the particular charge of its own minister. In the United States a parish is a body of people united in one Church organization. In Louisiana the counties are called parishes.

**Park.** See NATIONAL PARKS.

**Park, Mungo**, African traveler and author; born in Scotland in 1777; drowned on the Niger, in 1806.

**Park, Roswell**, an American physician; born in Pomfret, Conn., May 4, 1852; was graduated at Racine College and at the Northwestern University Medical School in 1876. He has written various works on surgery, and attended President McKinley when he was shot.

**Park, Roswell**, an American miscellaneous writer; born in Lebanon, Conn., in 1807. He died in Chicago, Ill., in 1869.

**Park College**, a coeducational institution in Parkville, Mo.; founded in 1875; under the auspices of the Presbyterian Church.

**Parke, John Grubb**, an American military officer; born in Chester co., Pa., Sept. 22, 1827; was graduated at the United States Military Academy, July 1, 1849, and was assigned to the Corps of Engineers as brevet 2d lieutenant. From 1857 till the opening of the Civil War, he was chief astronomer and surveyor in the

demarkation of the N. W. boundary line between the United States and British America. He served through the Civil War; promoted Major-General of volunteers in 1862; brevetted Major-General, U. S. A., in 1865; promoted colonel, U. S. A., in 1884; and was retired July 2, 1889. From 1887 till his retirement he was superintendent of the Military Academy. He died in Washington, D. C., Dec. 16, 1900.

**Parker, Alton Brooks**, an American jurist; born in Cortland, N. Y., May 14, 1852; educated in the Public schools, in Cortland Academy and Cortland Normal School. Was admitted to the bar, and practised at Kingston; was surrogate (the New York term for judge of probate) of Ulster county, 1877 to 1885; delegate to Democratic National Convention, 1884, when Grover Cleveland was nominated for President; in 1885 was offered the office of First Assistant Postmaster-General; was chosen chairman of the Democratic State Executive Committee in that year, and was also elected, the same year, Justice of the Supreme Court; member of the Court of Appeals, Second Division, 1889 to 1893; member of the General Term, Appellate Division, 1893-1897. Judge Parker received the Democratic nomination for President in 1904; and was defeated by Theodore Roosevelt, the Democratic ticket having 140 electoral votes to 336 for the Republican.

**Parker, Horatio**, composer; born Auburndale, Mass., Sept. 15, 1863. He studied in Europe, held several important American organ positions and in 1894 became professor of music at Yale. His oratorios and other compositions are of a high order.

**Parker, Sir (Horatio) Gilbert**, Canadian author; born at Camden, East, Ont., Nov. 23, 1862. His novels of Canadian life are intensely dramatic, and have won great popularity.

**Parker, James**, lawyer; born Newark, O., 1832; was educated at Annapolis; served in the Civil War; and in 1901 was counsel for Rear-Admiral Schley in the Schley Court of Inquiry. He died March 23, 1914.

**Parker, Joseph**, an English preacher and orator; born April 9,

1830, in Hexham, Northumberland; was educated privately and at University College, London; elected Chairman of the Congregational Union, 1884; minister of the City Temple, London, from 1869; author of "The People's Bible," a gigantic undertaking in 25 volumes. In the autumn of 1887 Dr. Parker visited the United States. He died November 29, 1902.

**Parker, Matthew**, Archbishop of Canterbury; born in Norwich in 1504; was educated at Cambridge, and after having been licensed to preach was appointed dean of Stoke College in Suffolk. In 1544 he was appointed master of Corpus Christi College, Cambridge, and elected vice-chancellor of that university the following year. When Queen Mary succeeded to the throne Parker was deprived of his offices, and remained in concealment till the accession of Elizabeth in 1558. By royal command he was summoned to Lambeth, and appointed Archbishop of Canterbury. It was while he held this office that he had what is known as the Bishop's Bible translated from the text of Cranmer, and published at his own expense. He died in 1575.

**Parker, Theodore**, an American theologian; born in Lexington, Mass., in 1810. He entered Harvard College in 1830. In 1834 he entered the Theological School; he was chosen, in 1837, minister of a Unitarian congregation at West Roxbury, his marriage having taken place just previously. He had there leisure for study; he visited Europe in 1843. The prejudice against him led to his quitting West Roxbury, and settling at Boston in 1846, as minister of the Twenty-eighth Congregational Society. He distinguished himself as the fearless opponent of the Fugitive Slave Law and sheltered slaves in his own house. Early in 1859 he was compelled to relinquish his duties and seek health in France and Italy. He died in Florence in 1860.

**Parker, Willard**, an American physician and surgeon; born in New Hampshire, in 1800; he made many important discoveries in practical surgery. He died in 1884.

**Parkhurst, Charles Henry**, an American clergyman and reformer; born in Framingham, Mass., April 17, 1842. He was graduated at Amherst College in 1866; studied theology in

Germany. After 1880 he was pastor of the Madison Square Presbyterian Church New York. In 1891, as president of the Society for the Prevention of Crime, he began an attack on the police department of New York city, and was prominent in the investigation which followed.

**Parkman, Francis**, an American historian; born in Boston, Mass., Sept. 16, 1823; was graduated at Harvard in 1844; studied law for two years; then traveled in Europe; and returned to explore the Rocky Mountains. The hardships he endured among the Dakota Indians seriously injured his health, yet in spite of this and defective sight Parkman worked his way to recognition as a historical writer on the period of rise and fall of the French dominion in America. He died in Boston, Mass., Nov. 8, 1893.

**Parliament**, the title of the British legislature, consisting of a House of Lords and House of Commons.

**Parnassus**, a famous mountain of Greece, government of Phocis, N. W. of Mount Helicon. It has three peaks, the highest of which reaches an elevation of 8,068 feet. On the W. side lay Delphi, the seat of the famous oracle, and the fountain of Castalia. The highest peak was dedicated to Bacchus, and was the scene of the orgies of his worship. The rest of the mountain was sacred to Apollo and the Muses; hence, poets were said "to climb Parnassus."

**Parnell, Charles Stewart**, an Irish statesman; born at his father's estate of Avondale, Wicklow co., Ireland, in 1846. His mother was the daughter of Admiral Stewart of the United States navy. He was educated at Magdalen College, Cambridge; became member of Parliament in 1875; organized the "active" Home Rule Party, and developed its obstruction tactics; and in 1879 formally adopted the policy of the newly formed Land League, was an active member of it, and was chosen president of the organization. In 1880 he was returned for the City of Cork, and was chosen as leader of the Irish party. In the session of 1881 he opposed the Crimes Act and the Land Act; was arrested (Oct. 13), under the terms of the former, along with

other members of his party; and was lodged in Kilmainham jail, from whence he was not released till the following May. In 1883 he was the recipient of a large money testimonial (chiefly collected in America), and in this year was active in organizing the newly formed National League. At the general election of 1885 he was reelected for Cork, and next year he and his followers supported the Home Rule proposals introduced by Mr. Gladstone, while he also brought in a bill for the relief of Irish tenants that was rejected. In 1887 he and other members of his party were accused by the "Times" of complicity with the crimes and outrages of Irish nationalists, but after a judicial investigation were acquitted, Parnell recovering damages from the "Times," which had been misled by the forger Piggott. Parnell's intrigue with Mrs. O'Shea (to whom he was married after her divorce) led to his political annihilation and deposition as party leader in 1890. Shortly afterward, he died in Brighton, England, Oct. 6, 1891.

**Parody**, a kind of writing in which the expression, form, and style of a serious composition are closely imitated, but treated in a humorous or burlesque manner; a burlesque imitation of a serious composition; a travesty or burlesque in which the form and expression of the original are closely adhered to.

**Parole**, a word of promise; a word of honor; faith plighted; specifically a promise given by a prisoner on his honor that he will not attempt to escape if allowed his liberty, or that he will return to custody on a certain day if released.

**Paros**, one of the larger islands of the Cyclades division of the Greek Archipelago; a low pyramid in shape, it has an area of 64 square miles; pop. nearly 7,000, of whom some 2,200 live in the capital, Paroskia. The quarries of the famous white Parian marble are near the summit of Mount St. Elias (ancient Marpessa), and are not yet exhausted.

**Parotid Glands**, a pair of glands situated, one on each side of the cheek, near the junction of the upper and lower jaws. Their chief function is the secretion of pure saliva through

the parotid duct, to assist in the processes of mastication and deglutition.

**Parr, Catharine**, the 6th wife of King Henry VIII.; daughter of Sir Thomas Parr; born in 1512. Married first to one Edward Borough, possibly Lord Borough, and afterward to Lord Latimer, she on July 12, 1543, became queen of England by marriage with Henry VIII. She persuaded Henry to restore the right of succession to his daughters, and interested herself on behalf of the universities. After Henry's death she married (1547) Sir Thomas Seymour, and died in the following year.

**Parrakeet, or Parakeet**, a popular name for any of the smaller long-tailed parrots. The word is in common use, but is applied without any strict scientific limitation to birds of different genera, and even of different families.

**Parricide**, one who murders his father, ancestors, or any one to whom reverence is due.



GRAY PARROT.

**Parrot**, the popular name for any individual of a well-known group of birds from the warmer regions of the globe, remarkable for the brilliant, and in some cases gaudy, coloration of their plumage, and the facility with which many of them acquire and repeat words and phrases.

**Parrot Fish, or Parrot Wrasse**, a genus of fishes. The name seems to refer to the frequently bright colors, and partly to the shape of the mouth;

for the jaws form a strong and sharp beak, and the teeth are soldered together. Over 100 species are known.

**Parrott Gun**, a kind of rifled cannon invented by Capt. R. G. Parrott of the Cold Spring Foundry, West Point, N. Y., and much employed in the United States during the Civil War. The body of the gun is of cast iron, and is reinforced at the breech by shrinking on a ring of wrought iron. The number of grooves increased with the caliber of the gun, the 10-pounder having three.

**Parrott, Robert Parker**, an American inventor; born in Lee, N. H., Oct. 5, 1804; was graduated at the United States Military Academy in 1824; commissioned a lieutenant, he served through the Creek war, and was afterward assigned to the Ordnance Bureau at Washington. After his resignation, he invented the well-known Parrott gun. He died in Cold Spring, N. Y., Dec. 24, 1877.

**Parry, Sir William Edward**, an English navigator; born in Bath in 1790. He entered the navy in 1803, and in 1818 accompanied Sir John Ross, as second in command, to Baffin's Bay, in an expedition for the discovery of the Northwest Passage. This expedition returned to England unsuccessful. The year following Lieutenant Parry was appointed to the command of the "Hecla," and "Griper" for a similar object; and this voyage resulted in the discovery of a considerable portion of the Northwest Passage, the ships wintering at Melville's Island. Captain Parry afterward commanded two other expeditions, but the nature of the ice on both occasions obliged the ships to return. In 1827 he again commanded the "Hecla" in an attempt to reach the North Pole. The ship was left at Spitzbergen, and Parry with his boats succeeded in reaching the highest latitude attained up to that time (82° 45'), but the drift of the ice S. prevented further advance. He died in 1855.

**Parsees, or Guebres**, the name of the small remnant of the followers of the ancient Persian religion, as established or reformed by Zoroaster.

The Parsees of India bear equally with their poorer brethren in Persia the highest character. Their general

appearance is to a certain degree prepossessing, and many of their women are strikingly beautiful. Zend, the holy language, is used by the priests, who, as a rule, have no more knowledge of it than the laity. Conspicuous among Parsee merchant-princes was Sir Jamsetjee Jejeebhoy. In 1921 there were 101,778 Parsees in British India, two-thirds living in Bombay.

Parsees do not eat anything cooked by a person of another religion; they also object to beef and pork, especially to ham. Marriages can only be contracted with persons of their own caste and creed. Their dead are not buried, but exposed on an iron grating in the Dakhma, or Tower of Silence till the flesh has disappeared, and the bleaching bones fall through into a pit beneath, from which they are afterward removed to a subterranean cavern.

Ahura-Mazda being the origin of light, his symbol is the sun, with the moon and the planets, and in default of them the fire. Temples and altars must for ever be fed with the holy fire, brought down, according to tradition, from heaven, and the sully of whose flames is punishable with death. The priests themselves approach it only with a half mask over the face, and never touch it but with holy instruments. But however great the awe felt by Parsees with respect to fire and light they never consider these as anything but emblems of divinity. There are two main sects among them, as well as Conservatives and Liberals in usage, the latter allowing many innovations resisted by the others.

**Parsley**, an aromatic herb found on walls, and in waste places, as a garden escape. There are three leading varieties of the plant, the common or plain-leaved, the curled, and the carrot-rooted parsley. The second is that more generally cultivated as a culinary vegetable.

**Parsnip**, a common garden vegetable. The boiled root is eaten; sheep and oxen fatten rapidly upon it; a kind of wine may be made from it; its seeds are aromatic and contain an essential oil.

**Parsons, Albert Ross**, an American pianist and musical critic; born in Sandusky, O., Sept. 16, 1847.

**Parsons, Mrs. Frances Theodora (Smith) (Dana)**, an American writer; born in New York in 1861.

**Parsons, Lewis Baldwin**, an American military officer; born in Genesee co., N. Y., April 5, 1818; was graduated at Yale College in 1840 and at the Harvard University Law School in 1844; served through the Civil War; was chief of river and railroad transportation of the National armies; and was brevetted Major-General of volunteers in 1866. Died in 1907.

**Parsons, Theophilus**, jurist; b. Essex Co., Mass., Feb. 24, 1750; graduated at Harvard, 1769; became a lawyer, 1774; was one of the framers of the Massachusetts constitution 1779; and one of the signatories of the Constitution of the United States 1789. He became chief justice of Massachusetts, 1806. He died in 1813.

**Parsons, Theophilus**, author, son of the preceding. b. Newburyport, Mass., 1797; graduated at Harvard, 1815, where, 1847, he became Dane Professor of Law. Died Jan. 26, 1882.

**Parsons, William Barclay**, engineer; b. New York city Apr. 15, 1859. He graduated from Columbia Univ. 1879; from the Columbia School of Mines 1882; became connected with various railroad enterprises throughout the world; 1894-1905 designer and engineer of the New York City Railway; in 1905 a member of the Internat. Comm. of Engineering Experts on the Panama Canal.

**Parsons College**, a coeducational institution in Fairfield, Ia.; founded in 1875, under the auspices of the Presbyterian Church.

**Parthenon**, a celebrated temple at Athens, consecrated to Athena or Minerva, the protectress of the city, built on an elevated rock near the Acropolis, and has always been regarded as the most exquisite and perfect example of Grecian architecture. The Parthenon was erected about 448 B. C., in the time of Pericles, Phidias being the chief sculptor. It had a length of 223 feet, by a breadth of 100; it had eight columns beneath each pediment, and 15 on each side, exclusive of those at each end of the pediments, with which they formed 16 intercolumns, or 46 columns in all, exclusive of those within the building.

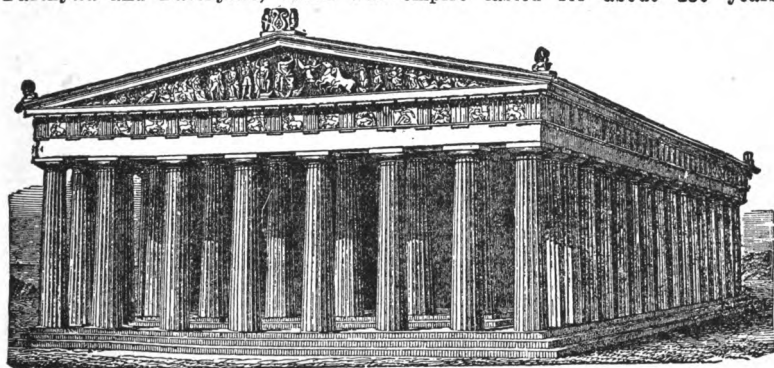


This magnificent fane had resisted the ravages of time down to the 17th century, being by turns a pagan temple, a Christian church, and also a Turkish mosque, till at the siege of Athens by the Venetians, in 1687, a shell fell on the roof of the Acropolis or citadel, which, firing the magazine beneath, shattered that building and the Parthenon into blackened ruins.

**Parthenopean Republic**, the name given to the State into which the Kingdom of Naples was transformed by the French republicans in 1799; it existed only for five months.

**Parthia**, a celebrated country of ancient Asia, called by the Greeks Parthyoea and Parthyene, which was

formed into a province called a satrapy. When Alexander conquered Persia, he united Parthia and Hyrcania into one satrapy. After the dissolution of the Greek empire, the country became subject to Eumenes; next, to Antigonos and the Syrian kings till 256 B. C., when, throwing off the yoke of their tyrant masters, the Parthians established their independence under one of their own chiefs, Arsaces I., from whom all their succeeding monarchs received the name of Arsacidæ. Under this dynasty, the empire extended from the Indus to the Euphrates, and from the Oxus in the N. to the Persian Gulf in the S. This empire lasted for about 480 years,



THE PARTHENON RESTORED.

bounded N. by Hyrcania, S. by Carmania Deserta, E. by Asia, and W. by Media. Parthia was a mountainous country of great extent, having 25 large cities, of which the chief, and capital of the country, was Hecatompylon—so named from having 100 gates. When Parthia rose in the scale of nations and became a powerful state, the empire of Parthia was made up of conquered kingdoms, extending from the Caucasus in the N. to the Erythrean Sea in the S., and from the Indus in the E. to the Tigris in the W. The Parthians, originally an offshoot from the Scythians, were noted for their love of war and martial glory. The Parthians became subject to Persia; and their country, with Sogdiana and some other states, was

when the last king, Artabanus, was murdered by a chief called Artaxerxes, a descendant of the founder of the empire, who, usurping the throne, established the new Persian dynasty called the Sassanidæ.

**Participle**, a part of speech, so called because it partakes of the nature both of a verb and an adjective. A participle differs from an adjective in that it implies the relation of time, and therefore is applied to a specific act, while the adjective denotes only an attribute as a quality or characteristic without regard to time.

**Partnership**, the state or condition of being a partner, associate, or participator with another; joint interest in any undertaking.

**Parton, James**, an American writer; born in Canterbury, England, Feb. 9, 1822. He wrote many valuable biographies. He died in 1891.

**Parton, Sara Payson Willis**, "Fanny Fern," an American essay-writer, sister of N. P. Willis, and wife of James Parton; born in Portland, Me., July 9, 1811. She is said to have contributed an article each week for 16 years to the New York "Ledger." She died in 1872.

**Partridge**, a well-known game bird widely distributed. The partridge prefers open grounds, and often nests in exposed situations. It feeds on slugs, caterpillars, and grubs to a large extent, and so compensates the farmer for any injury it does.

**Partridge Berry**, a plant of the heath family, inhabiting North America, also known as wintergreen. The name is also applied to another North American shrub, a pretty little trailing plant, with white fragrant flowers and scarlet berries.

**Pasadena**, a city in Los Angeles county, Cal.; on the Southern Pacific and other railroads; is in the noted San Gabriel valley, at the foot of the Sierra Madre Mountains, popularly known as the "Italy of America"; is chiefly engaged in fruit raising; and, besides its equable climate, has the attractions of superb scenery, including Wilson's Peak, Mount Lowe, Echo Mountain, and the famous San Gabriel Mission. Pop. (1930) 76,086.

**Pascal, Blaise**, a French author; born in Clermont, Auvergne, France, in 1623. At 12 years of age, he was surprised by his father in the act of demonstrating, on the pavement of an old hall where he used to play, by means of a rude diagram traced with a piece of coal, a proposition which corresponded to the 32d of the first book of Euclid. At the age of 19 he invented his celebrated arithmetical machine, and at the age of 26 he had composed the greater part of his mathematical works, and made brilliant experiments in hydrostatics and pneumatics, which ranked him among the first natural philosophers of his age. But a strong religious impulse having been imparted he re-

nounced the career to which his genius invited him for theology. Died 1662.

**Paschall II.**, Pope; a native of Tuscany, succeeded Urban II. in 1099. He had a contest with the Emperor Henry IV., respecting the right of investitures. Henry visited Rome, to be crowned by the Pope, who refused to perform the ceremony unless he yielded the matter in dispute. On this Henry caused Paschal to be retired from Rome. Paschal, after a captivity of two months, conceded his claim to the investitures. He died in 1118.

**Passaic**, a city in Passaic county, N. J.; on the Passaic river and several steam and trolley lines; 5 miles S. E. of Paterson; is in a good farming and grape-growing section; manufactures cotton, woolen, and rubber goods, wine, paper, and blankets; and has an Emergency Hospital, Collegiate School, Manual Training School, and handsome churches, public schools and residences. Pop. (1930) 62,959.

**Passenger Pigeon**, also called wild pigeon and migratory pigeon. It is found from the Atlantic to the great central plains, and from the Southern States, where it only occasionally occurs, to 62° N.

**Passes**, a tribe of Indians living in Brazil on the N. side of the Amazon, about the mouth of the Japura. They have always been friendly to the whites and are a peaceful, industrious race, many of whom lived in the mission villages in the 18th century. They are a branch of the great Arawak or Maypure stock.

**Passiflora**, the passion-flower. Generally climbing herbs or shrubs. Fruit succulent, seeds many. Found chiefly in tropical America. The three stigmas seemed to the devout Roman Catholics of South America to represent nails; one transfixing each hand, and one the feet of the crucified



PASSENGER  
PIGEON.

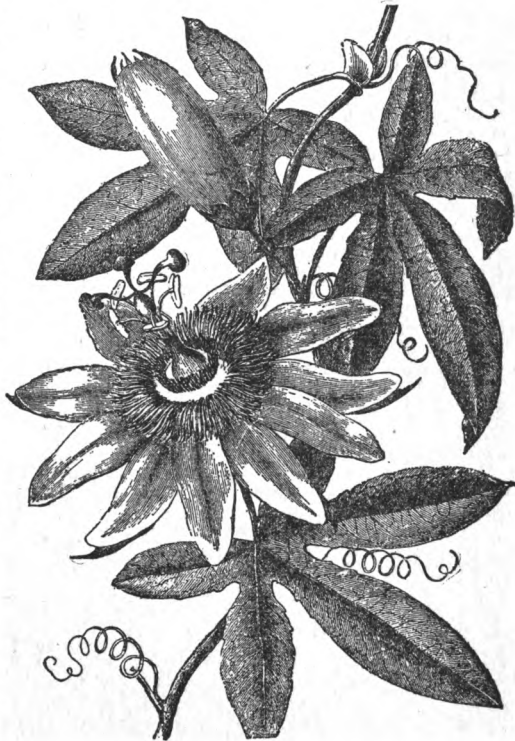
Saviour; the five anthers, His five wounds; the rays of the corona, His crown of thorns, or the halo of glory around His head; the digitate leaves, the hands of those who scourged Him; the tendrils, the scourge itself; while, finally, the 10 parts of the perianth were the 10 apostles—that is, the 12 wanting Judas who betrayed, and Peter who denied, his Lord.

**Passionists**, a congregation of Roman Catholic priests founded by Paul Francis (1694–1775), surnamed Paul of the Cross, in 1737. The first convent was established on the Celian Hill at Rome. It has been revived since 1830, and they have been introduced lately in the United States, where they now possess four monasteries.

**Passion Play**, a mystery or miracle play founded on the passion of our Lord; a dramatic representation of the scenes of the passion. The only Passion play still kept up is that periodically represented at Oberammergau in Bavaria.

**Passover**, a festival instituted to commemorate Jehovah's "passing over" the Israelite houses while "passing through" those of the Egyptians, to destroy in the latter all the first-born. The first passover (that in Egypt), those subsequently occurring in Old Testament times, and those of the New Testament and later Judaism, were all somewhat different. In the first of these a lamb without blemish was taken on the 10th, and killed on the 14th, of the month Abib, thenceforward in consequence to be reckoned the first month of the ecclesiastical year. The blood of the lamb was to be sprinkled on the two side posts and the single upper door post, and the flesh eaten "with unleavened bread

and bitter herbs" before the morning. That night Jehovah, passing over the blood-stained doors, slew the first born in the Egyptian houses not similarly protected; and, as the emancipated



PASSION FLOWER.

Jews that night departed from Egypt, that first passover could have continued only one day. But the festival was to be an annual one. Connected with it was to be a feast of unleavened bread, continuing seven additional days, viz., from the 15th to the 21st of Abib, during which no leaven was to be eaten, or even allowed to be in the house.

Sometimes the term passover is limited to the festival of the 14th of

Abib; sometimes it includes that and the feast of unleavened bread also, the two being viewed as parts of one whole. When the Jews reached Canaan, every male was required to present himself before God thrice a year, viz., at the passover, or feast of unleavened bread, at that of "harvest" and that of "ingathering." In the Old Testament six passovers are mentioned as having been actually kept: That in Egypt, that in the wilderness, that under Joshua at Gilgal, that under Hezekiah, that under Josiah, and that under Ezra. Passover in the sense of the paschal lamb, St. Paul applies to Christ, whose death was typical of that of the paschal lamb.

**Passport**, a warrant of protection and authority to travel, granted to persons moving from place to place, by a competent authority. In some states no foreigner is allowed to travel without a passport from his government. In the United States passports, with description of the applicant, are issued by the State Department at Washington. They are good for two years from date, renewable by stating the date and number of the old one. They are issued only to citizens, native born and naturalized. Early in the World War it became evident that American passports were being forged on a great scale for unneutral propagandists, and the Government made the requirements for their issue more stringent than before.

**Pasteur, Louis**, a French chemist and physicist; born in Dole, Jura, in 1822; educated at Jena University and the Ecole Normale, Paris, where in 1847 he took his degree as doctor. He was especially successful in proving the part played by microbes in fermentation and decomposition, in introducing a successful treatment of diseases in silkworms and cattle, and achieved great success in his efforts to check hydrophobia by means of inoculation. To enable him to deal with this disease under the best conditions a Pasteur Institute was opened in Paris, where patients are received from all parts of Europe. A similar institution, in New York city, has proved very successful. He died in Paris, Sept. 28, 1895.

**Pastor**, a shepherd; now used almost exclusively in its figurative sense,

for one who feeds the Christian flock; a minister of the Gospel, having charge of a church and congregation. In ornithology the rose-colored ousel. It has a wide geographical range, and in habits resembles the starling. It is often called the locust bird.

**Pastoral Poetry**, poetry which deals, in a more or less direct form, with rustic life.

**Pastoral Staff**, in the Roman Catholic Church the official staff of a bishop or abbot. The pastoral staff of an archbishop is distinguished by being surmounted by a crozier.

**Pastoureaux**, or **Pastorels**, disorderly peasant mobs which overran parts of France in the 13th and 14th centuries. These outbreaks took place:

(1) In Berry in 1214. The peasantry pillaged chateaux and religious houses, and proclaimed universal equality and the coming of the Holy Ghost.

(2) In 1250; the ostensible objects were the rescue of Louis VII. and the recovery of the Holy Sepulcher. The rising originated in Flanders, under the leadership of a person of unknown name called the Master of Hungary, who, when he reached Paris, was at the head of 100,000 men. Here they not only usurped priestly functions, performed marriages, distributed crosses, offered absolution to those who joined the crusade, but they inveighed against the vices of the priesthood. They separated into three divisions, and marched S., where they were attacked and cut to pieces.

(3) In 1320, in the reign of Philip V. This outbreak took place under the pretense of a crusade. The insurgents were excommunicated by Pope John XXII.; and being hemmed in in Carcassonne, numbers perished of disease



PASTORAL STAFF.



and famine, and the survivors were put to death.

**Patagonia**, the name applied to that extreme portion of South America which is bounded E. by the Atlantic, W. by the Pacific, S. by the Strait of Magellan, and N. by the Rio Negro. Since 1881 this large territory has been, by treaty, divided between Chile and the Argentine Republic, so that the portion W. of the Andes (63,000 square miles) belongs now to the former, and the portion E. of the Andes (360,000) belongs to the latter. The Straits of Magellan form a S. boundary of 360 miles, and separate the mainland from the numerous islands of Tierra del Fuego. Here the Chilean government has established the settlement of Punta Arenas, with stations along the coast. Patagonia E. of the Andes consists mainly of vast undulating plains, frequently covered with shingle and broken up by ridges of volcanic rock. The vegetation is scanty, except in the region adjoining the Andes, and in many places there are shallow salt lakes and lagoons. The chief rivers are the Rio Negro, the Chupat, the Rio Desire, and the Rio Chico, all of which have their sources in the Andes, and run E. There are few if any good seaports. The Patagonians are a tall, muscular race averaging fully six feet in height, with black hair, thick lips, and skin of a dark brown color. They are a nomad race, divided into numerous tribes, whose chief occupation is in hunting and cattle breeding. This native population is rapidly disappearing. Colonization is encouraged by the Argentine government, and there are many tracts suitable for European settlement. The country was first discovered by Magellan in 1520.

**Pate de foie gras**, a dish made from the enlarged livers of overfed geese, and much relished by epicures. It is made in the form of a pie, and from its oily nature is very indigestible, and nauseous to most people.

**Patent**, an exclusive right granted by a government (in letters patent or open, whence the name) to any person or persons to manufacture and sell a chattel or article of commerce of his **own** invention. In the United States

the person applying for a patent may present a petition, specification, oath, and filing fee, with a drawing if the nature of the case admits of it. On favorable action by the patent office, letters granting to the patentee, his heirs, or assigns, for the term of 17 years, the exclusive right to make, use, and vend the invention or discovery throughout the United States and the Territories thereof, are issued. Design patents are granted for periods of three years and six months, seven years, or 14 years, at discretion of the applicant. Patents are extended only by special congressional legislation. The filing of a caveat prior to applying for a patent entitles the inventor to notice of an interfering application filed during the life of the caveat (one year), during which he may perfect his invention. During the year ended June 30, 1926, there were granted 74,627 patents, including 2,543 designs and 981 reissues, 19,246 registrations for trade marks, 1,206 registrations for labels, and 402 registrations for prints. The total receipts of the Patent Office were \$5,465,291 net surplus over ten million dollars.

By the statute of 1870 it was enacted that an invention to be patentable, must possess, among other qualifications, that of newness. He who produces an old result by a new mode or process is entitled to a patent for that mode or process; but he cannot have a patent for a result merely without using some new mode or process to produce it. A man is entitled to all the benefit of the article which he has invented and patented. Another who happens to discover an additional use to which the invention may be applied does not, by that discovery and application create a patentable novelty. A simple alteration in the form, size, material or proportions of an existing device is not such a change as to produce a patentable novelty. As a cumulative definition it may be said that novelty consists in producing a new substance, or an old one in a new way, by new machinery, or by a new combination of the parts of an old machine, operating in a peculiar, better, cheaper or quicker method, or by a new mechanical employment of principles already known.



**Paterson**, a city and county-seat of Passaic co., N. J., on the Passaic river, 16 miles N. W. of New York. The city is chiefly noted for its silk industries, on account of which it is called the "Lyons of America." It is built partly on the slopes of ranges of hills which surround it, and partly on a broad plain. On Feb. 2-3, 1902, the business portion of the city was destroyed by fire, entailing a loss of over \$10,000,000. The principal municipal buildings, churches, banks, and stores were swept away by the flames.

Paterson is an important manufacturing center. Its silk mills are the largest in the United States, there are 691 manufacturing plants producing silk and silk products, employing 16,368 wage earners, paying \$22,043,617 for wages, and \$66,601,152 for raw materials, and yielding products having a combined value of \$200,976,520.

Paterson has an area of 8 square miles; 200 miles of streets, most of which are paved. The city's sewage system has been pronounced by experts to be one of the finest in the country. Electricity and gas are used for street illumination. The annual cost of maintaining the city government is in excess of \$1,400,000. The streets, besides being well paved, are broad and give easy access to and from the city. Among the local attractions are the Passaic Falls, 72 feet high.

Paterson was founded in 1791 by a cotton manufacturing society which owed its origin to Alexander Hamilton. This society had a capital of \$1,000,000, with which it intended to lay the foundation of a great National manufacturing city. The city was named in honor of Gov. William Paterson of New Jersey. In 1851 it was incorporated as a city. Paterson has recently been visited by floods as well as fire, the flood of October, 1903, being especially calamitous, but the people have faced and overcome these disasters with unflinching courage. Pop. (1902) 135,866; (1928 Est.) 144,900.

**Paterson, William**, an English financier; born in Dumfriesshire, Scotland, in 1665. He resided in the Bahama Islands. Returning to London he engaged in trade with success, and in 1694 founded the Bank of England, being one of its first directors. In 1695

he obtained the sanction of a Scotch act of Parliament constituting the Darien Company. After the failure of this scheme he returned to England. When the Treaty of Union between England and Scotland was concluded in 1707, Paterson, who was one of its warmest advocates, after much difficulty received an indemnity of \$90,000 for the losses he had sustained. He died in London in 1719.

**Pathology**, the branch of medical science which treats of disease. It investigates its predisposing and existing cause, its characteristic symptoms, and its progress from first to last.

**Patmos**, a rocky and barren island, of most irregular outline, in the Aegean Sea, one of the Sporades, lying to the S. of Samos, now called Patino; area, 16 square miles. It is celebrated as the place to which the apostle John was exiled; in a cave here, it is said, he saw the visions recorded in the Book of Revelation. The island is under Turkish rule, but is inhabited by about 4,000 Greeks.

**Patna**, called also Azimabad, a city of Bengal, 140 miles E. of Benares, extends 9 miles along the Ganges and 2 miles back from the river; the streets are narrow and crooked, and the houses mostly mean in appearance. Patna, under its early name of Pataliputra, is supposed to have been founded about 600 B. C. It was visited by Megasthenes, the Greek historian, about 300 B. C., and called Palibothra by him. In modern times Patna is notable as the scene of a massacre of British prisoners by Mir Kasim in 1763, which led to war and annexation by the English, and for the mutiny at Dinapur, the military station of Patna in 1857. Patna ranks as the twentieth city of India in point of population. Pop. (1921) 119,976.

**Paton, John Gibson**, a Scotch missionary; born in Kirkmahoe, Dumfriesshire, Scotland, May 24, 1824. He offered his services for the foreign mission field in connection with the Reformed Presbyterian Church, and on his ordination he settled toward the end of 1858 among the cannibal natives of Tanna. Here he labored amid trials and difficulties till 1862, when he was forced to leave, owing to the hostility

## Paton

of the natives. For the next 20 years his work was on the neighboring island of Aniwa, the whole population of which became Christian. He died Jan. 2, 1907.

**Paton, Sir Joseph Noel**, a Scotch historical painter; born in Dunfermline, Scotland, in 1821. He gained one of three premiums at the Westminster competition by his fresco of the "Spirit of Religion," and a prize of \$1,500 by his paintings "Christ Bearing the Cross," and "The Reconciliation of Oberon and Titania." He died in Edinburgh, Dec. 26, 1901.

**Patriarch**, the father and ruler of a family; one who governs his family or descendants by paternal right. The term is usually applied to Abraham, Isaac, Jacob, and his sons, or the heads of families before the flood. In Roman Catholic Church history, the highest grade in the hierarchy of ordinary jurisdiction, the see of Rome excepted.

**Patrician**, a Roman senator; a person of noble birth; a nobleman; a wealthy noble. The Roman patricians consisted of about 300 houses, or clans, who, descending from the first Roman senators, constituted the aristocracy of the city and territory. At first the patricians monopolized all high offices in the state, but after political contests with the plebeians, lasting for centuries, Licinius (365 B. C.) carried his rogation, by which plebeians were admitted to the consulate, and to the custody of the Sibylline books.

**Patrick, St.**, or **Patricius**, the apostle or patron saint of Ireland; said to have been born near the site of Kilpatrick, Scotland. His zeal prompted him to cross the channel for the conversion of the pagan Irish. His arrival in Ireland took place probably between 440-460. His endeavors were crowned with great success, and he established there a number of schools and monasteries. He died at an advanced age.

**Patrol**, or **Patrole**, a walking or marching round of a guard in the night to watch and observe what passes, and to secure the peace and safety of a camp or other place.

**Patron**, in Roman history, one who had manumitted a slave between

## Patterson

whom and his manumission a new relation was created, the freedman owing his former master the obedience of a son, and the patron assuming many of the rights which the power of patron conveyed.

**Patron Saint**. According to Roman Catholic and Greek belief, the saint under whose invocation countries, churches, religious houses or societies, or individuals are placed.

**Patten, James A.**, was born at Freeland Corners, Ill., May 8, 1852. He was a noted grain commission merchant, and first attracted attention, when, in 1902, he cornered the oat market at a profit of seven figures. Simultaneous with his financial success came his philanthropic tendencies and \$150,000 was donated to Northwestern University for the construction of a gymnasium. Throughout his life he was one of their heaviest donors.

In May, 1909, he outwitted the Wall Street magnates and realized about \$2,000,000 from the wheat market. He next attracted attention in 1910 when in one transaction in the cotton market he is reputed to have realized \$4,000,000 profit in one day. Tried in the Federal Courts of New York he was indicted for conspiracy to violate the Sherman Anti-Trust Law, pleaded guilty and was fined \$4,000.

He was a director of the Chicago Board of Trade for many years and was director of several banks. He never held political office with the exception of Mayor of Evanston during the term 1901 to 1905. Coincidental with the razing of the Chicago Board of Trade Building came the passing of the "Wheat King." He died of pneumonia in his home at Evanston, Ill., Dec. 8, 1928.

**Patrons of Husbandry**. See HUSBANDRY, PATRONS OF.

**Patten, George Washington**, soldier and poet; born in Newport, R. I., Dec. 25, 1808; died in 1882. Educated at United States Military Academy, he served in the Mexican war.

**Patterson, Joseph**, an American banker; born near Norristown, Pa., Sept. 25, 1808. During the Civil War through his influence the bankers of the country made a loan of \$50,000,000 in gold to Secretary Chase, and

**\$100,000,000 more in the year following.** He died in Philadelphia, Pa., Sept. 25, 1887.

**Patterson, Robert Mayne**, an American clergyman; born in Philadelphia, Pa., July 17, 1832; was official reporter of the United States Senate in 1850-1855; was graduated at Princeton Theological Seminary in 1859; and pastor South Presbyterian Church, Philadelphia, in 1867-1880. He was a member of the Pan-Presbyterian Councils in London in 1875, Philadelphia, in 1880, and Belfast, Ireland, in 1884. He died in 1912.

**Patti, Adelina Maria Clorinda**, a popular operatic singer of Italian extraction; born in Madrid, Spain, in 1843. After a course of professional study she sang at an early age in New York. Her debut in London took place in 1861, and she was ever afterward looked upon as one of the first singers of the day. In 1868 she was married to the Marquis de Caux, from whom she was divorced in 1876. She subsequently married M. Nicolini, and appeared in the United States, South America, and Mexico at various times. M. Nicolini died in 1898. She married Baron Rolf Cederstrom, Jan. 25, 1899, and made a tour of the United States in the latter part of 1903. She died in 1919.

**Patti, Carlotta**, a popular Italian concert singer and sister of Adelina Patti; born in Florence, Italy, in 1840; made her debut in New York in 1861, and in England in 1863. She gave concerts throughout Europe and America with great success. She was married Sept. 3, 1879, to Ernest de Munk, a violoncellist of Weimar, and died in Paris, June 27, 1889.

**Pattison, Thomas Harwood**, an American educator; born in Cornwall, England, Dec. 14, 1838. For many years he was Professor of Pastoral Theology at Rochester (N. Y.) Theological Seminary. Died in 1904.

**Patton, Francis Landey**, an American educator; born in Warwick Parish, Bermuda, Jan. 22, 1843. He was educated at Knox College and the University of Toronto, and was graduated at Princeton Theological Seminary in 1865. In 1865-1871 he was pastor of several churches; in 1881 was appointed Professor of Relations

of Philosophy and Science to the Christian Religion in Princeton University, a chair created for him. He was president of the university in 1888-1902; then president of the Theological Seminary.

**Patton, Frank Jarvis**, an American inventor; born in Bath, Me., in 1852; was graduated at the United States Military Academy in 1877; invented the multiplex telegraph system and the gyroscope now used on ocean vessels to determine their position at sea. He died in New York city, Nov. 12, 1900.

**Patton, Jacob Harris**, an American historian; born in Fayette co., Pa., May 20, 1812; died in 1903.

**Paul IV.**, Pope; Giovanni Pietro Caraffa; born in Naples, in 1476; succeeded Marcellus II., in 1555. He established a censorship, and completed the organization of the Roman Inquisition. His foreign relations involved him in much labor and perplexity. Under the weight of so many cares, his great age gave way, and he died in 1559.

**Paul V.**, Pope; Camillo Borghese; born in Rome, in 1552; was elected in 1605, after the death of Leo XI. He embellished Rome with many excellent works of sculpture and painting, and an aqueduct. He was the founder of the Borghese family, one of the wealthiest in Italy. He died in 1621.

**Paul I.**, Emperor of Russia; born in 1754. He was the only son of Peter III. and his wife, Catherine II. He married the Princess Mary of Wurtemberg in 1776. On the death of Catherine in 1796 he was proclaimed emperor. He joined the second coalition against France; and Russian armies appeared in Italy, Switzerland, and Holland. But he afterward withdrew from it, and entered into friendly relations with Napoleon. A conspiracy was formed against him, with Count Pahlen at its head, and he was murdered in his bedroom, March 24, 1801.

**Paul, St.**, one of the apostles of Jesus Christ; originally called Saul; a Hebrew of the tribe of Benjamin, and a native of Tarsus, the capital of Cilicia, and was born at the beginning of the Christian era. His father was a Pharisee of the most rigid cast, and

Paul himself, up to the time of his conversion, was a most bitter and intolerant persecutor of the Christian sect; even assisting at the martyrdom of St. Stephen. The mode of his conversion is fully detailed in the New Testament. After his conversion, he was baptized at Damascus by Ananias; from whence, after a brief sojourn, he proceeded to Arabia, where he received the Holy Ghost. He was martyred about A. D. 66.

**Paul, Epistles of, St.** There are 14 epistles in the New Testament usually ascribed to Paul, beginning with that to the Romans, and ending with that to the Hebrews.

**Paulding, James Kirke**, an American author; born in Dutchess co., N. Y., Aug. 22, 1779. He early showed a tendency to literature. In 1837 Van Buren appointed him Secretary of the Navy. Four years later he retired to a country residence at Hyde Park, N. Y., where he died, April 6, 1860.

**Paulist Fathers**, a modern American society of the Roman Catholic Church, founded in New York by the late Rev. Isaac T. Hecker, in 1858. It is composed of 37 priests who are engaged in missionary and literary work; many of them are converts from Protestantism. They publish "The Catholic World," a monthly magazine.

**Paulownia**, a genus of trees with but one species; a native of Japan, and now grown in the United States.

**Paulus Hook, Fort**, a Revolutionary fortress erected by the British on the site of Jersey City, N. J.

**Pauncefoot, Julian, Lord**, an English diplomatist; born in Preston Court, Gloucestershire, England, in 1828. He was the first delegate to the Suez Canal International Commission at Paris in 1885. In 1889 he was appointed British minister to the United States and four years later the legation was raised to an embassy. He negotiated the settlement of the Bering Sea dispute; the Anglo-Venezuelan boundary arbitration, and was chief of the British delegates to the Peace Conference at The Hague in 1899. He also negotiated with the United States two conventions for the abrogation of the Clayton-Bulwer Treaty. He died May 24, 1902.

**Pavement**, the hard covering of the surface of a road or footway; a floor or covering of stones, brick, wood, etc., laid evenly on the earth, so as to form a level, hard, and convenient passage.

**Pawnbroker**, one who is licensed to lend, or make a business of lending money on goods pawned or pledged.

**Pawnees**, a tribe of American Indians who formerly resided in Nebraska, with branches extending into Kansas and Texas. They removed in 1876 to a reservation of 283,020 acres in Indian Territory, and are now few in number.

**Pawtucket**, a city in Providence county, R. I.; on the Pawtucket river and the New York, New Haven & Hartford railroad; 4 miles N. E. of Providence; has abundant water-power from a 50-foot fall of the river; was the site of the first cotton mill built in America (by Samuel Slater in 1790); and manufactures cotton and woollen goods, plush, braids, calicoes, leather, and machinery. Pop. (1930) 77,149.

**Paxton, Sir Joseph**, an English architect and horticulturist; born in Milton-Bryant, near Woburn, Bedfordshire, Aug. 3, 1803. He began life as a gardener. He designed the Crystal Palace at Sydenham and superintended its construction. He died in Sydenham, June 8, 1865.

**Paymaster**, an officer of the army and navy, from whom the officers and men receive their wages, and who is intrusted with money for that purpose.

**Paymaster-General**, in the United States, a title given to (1) the chief paying officer of the War Department, who ranks as a Brigadier-General; (2) a similar officer in the Navy Department, who ranks as a rear-admiral, and (3) a corresponding staff officer in the militia of a State.

**Payn, James**, an English novelist; born in Cheltenham, England, in 1830; was graduated at Cambridge in 1854. His works reach upwards of 100 books. He died in London, March 25, 1898.

**Payne, Henry Clay**, an American jurist; born in Ashfield, Mass., Nov. 23, 1843; was graduated at Shelburne Falls Academy (Mass.) in 1859; settled in Milwaukee in 1863; practised law in Chicago, Ill., in 1883-1893;

was president of the Chicago Law Institute in 1889; judge of the Superior Court of Cook co., Ill., in 1893-1898. On Dec. 16, 1901, he was appointed Postmaster-General of the United States. He died Oct. 4, 1904.

**Payne, John Howard**, an American dramatist; born in New York, June 9, 1792. At the age of 16 he made his first appearance at the Park Theater. He also played in England and Ireland, a part of the time with Miss O'Neill. In 1851 was appointed United States consul to Tunis. He wrote, translated and adapted over 60 plays, but is most famous as the author of "Home, Sweet Home." He died in Tunis, April 10, 1852.

**Peabody** (formerly SOUTH DANVERS), a town in Essex county, Mass.; 2 miles E. of Salem; contains the Peabody Institute and the Sutton Reference Library; and was the birthplace of George Peabody. Pop. (1930) 21,345.

**Peabody, Elizabeth Palmer**, an American writer and educator; born in Billerica, Mass., May 16, 1804. She became a teacher in Boston in 1822; and was one of the first to introduce the kindergarten system in the United States. She died in Jamaica Plain, Mass., Jan. 4, 1894.

**Peabody, George**, an American philanthropist; born in Danvers, Mass., in 1795. He became chief clerk, and, afterward, partner with his uncle, John Peabody, in Georgetown, D. C., in 1812. Not satisfied with their business relations, George left his uncle and joined partnership with Mr. Elisha Riggs in the drygoods business in Baltimore, in 1815. His business increasing, he found occasion to make frequent visits to England, where he finally settled in 1829. In 1837 he withdrew from the firm, and established himself as banker in London, where he amassed a fortune. He was particularly devoted to promoting education (see following). He died in London, in Nov. 1869.

**Peabody Education Fund.** In 1867 and 1869 George Peabody established a fund of \$3,500,000, to be devoted to education in the Southern States of the Union. The fund was placed in the charge and control of 15 trustees, who hold meetings annual-

ly, usually in New York. In its earlier history the chief aim of the fund was to encourage and secure the establishment of public school systems for the free education of all children. That having been accomplished, the income of the fund is now used for the training of teachers through normal schools and teachers' institutes. In 1909 the trustees appropriated \$1,000,000, out of \$2,500,000 on hand, to the Peabody Normal School at Nashville, Tenn.

**Peace Conference.** After the secession of several of the States of the American Union in 1860, Virginia, on Jan. 1, 1861, invited the remaining States to send delegates to a conference in Washington, with the object of devising a plan whereby all difficulties then existing might be peaceably settled. The conference met on Feb. 4. Fourteen free States and seven slave States were represented, and ex-President John Tyler was made the presiding officer. A committee of one from each State was appointed to draw up a report of "what they may deem right, necessary and proper, to restore harmony and preserve the Union."

The report was rejected by both Congress and Senate.

**Peace Congress, National**, organized by the National Arbitration and Peace Committee, and held in New York city, Apr., 1907, preceding The Hague International Peace Congress of that year.

**Peace Congress, Universal**, an international gathering at The Hague, held in response to an invitation of Nicholas II., Czar of Russia, beginning May 18, 1899, in which the United States took part, and which framed a plan, since approved by the powers, for a permanent Tribunal of Arbitration and periodical conferences.

**Peace Society, The**, an organization founded in 1816; has for its object the promotion of permanent and universal peace. It welcomes the support of Christians of all denominations, and also of those persons who oppose war on humanitarian or other grounds. The society has always advocated a gradual, proportionate, and simultaneous disarmament by all the nations of Europe, and the principle of arbitration, and claims as partly due to its efforts that this mode of set-



ting international difficulties has been frequently adopted.

**Peach**, a tree and its fruit, of the almond genus; the *Amygdalus Persica* of many varieties. They are extensively cultivated in the United States.

**Peacock**, a male gallinaceous bird of the *Pavo* genus, distinguished by its beautiful disc-like tail. The female is called a peahen.

**Peacock Butterfly**, a beautiful butterfly, two and one-half, or two and three-quarter inches across the wings. It is seen in numbers on the tops of nettles, in June and July. The perfect insect appears in August, lives through the winter, and is seen in March and April.

**Peale, Charles Wilson**, an American miscellaneous writer; born in Maryland, April 16, 1741. He attained distinction as a portrait painter, and naturalist. He died in Philadelphia, Feb. 22, 1827.

**Peale, Rembrandt**, an American artist; born in Bucks co., Pa., Feb. 22, 1778. When 17 years old executed a portrait of Washington, from whom he had three sittings; it was purchased by Congress. He died in Philadelphia, Pa., Oct. 3, 1860.

**Pear**, a shrub or small tree, 20 to 40 feet high, with the branches more or less spinescent and pendulous, and the fruit pyriform, one or two inches long, becoming larger and sweeter in cultivation. Many hundred cultivated varieties exist.

**Pea Ridge**, a post village in Benton co., Ark.; about 8 miles E. of Bentonville. Here, on March 6, 7, and 8, 1862, occurred one of the most desperate battles of the Civil War. Gen. Samuel B. Curtis, in command of about 11,000 Union troops, with 49 pieces of artillery, was attacked by a superior force of Confederates (said to number 20,000) under Gen. Earl Van Dorn, and a series of obstinate and sanguinary conflicts ensued; often favoring each army with temporary success, finally ended with the withdrawal of Van Dorn.

**Pearl**, a peculiar product of certain marine and freshwater mollusks or shellfish. The most famous pearls are those from the East; the coast of Ceylon. They are, however, obtained now of nearly the same quality in other

parts of the world. These, and indeed all the foreign pearls used in jewelry, are produced by the pearl oyster.

**Pearly Nautilus**, common in the Pacific and Indian Oceans, especially toward the Moluccas. It is believed to inhabit both deep and shallow water. The shell is imported into the United States for its fine mother-of-pearl, much in request with cabinet makers and jewelers.

**Pearsons, Daniel Kimball**, an American philanthropist; born in Bedford, Vt., April 14, 1820; was graduated at the Medical College of Woodstock, Vt.; practised medicine till 1857; engaged in real estate operations in Chicago till 1888; then devoted himself to assisting small colleges, giving away over \$5,000,000. He died April 27, 1912.

**Peary, Robert Edwin**, an Arctic explorer and civil engineer in the United States navy; born in Cresson, Pa., May 6, 1856; was graduated at Bowdoin College, and in 1885 became a civil engineer in the United States navy, with the rank of lieutenant. In 1886 he made a journey of reconnaissance to Greenland, advancing for over 100 miles on the interior ice. In 1891 and 1893 he made other trips to the Polar regions, in which he was accompanied, as far as the winter quarters, by his wife, Josephine Diebitsch Peary. In these expeditions he made excursions on a sledge along the coast of Greenland, and traversed the inland ice from McCormick Bay to the N. E. angle of Greenland (Independence Bay). He proved the convergence of the E. and W. coasts of Northern Greenland, and almost with positiveness the insularity of the mainland. He discovered new lands (Melville Land and Heilprin Land), and named many glaciers. In May, 1896, Lieutenant Peary made a successful expedition to Greenland for the purpose of collecting specimens in natural history. He returned to Cape Breton, Sept. 27. In 1897 he was given leave of absence by the government for the purpose of continuing his explorations in the northern seas, and to establish a station in the far N. of Greenland, which should be provisioned and supplied and made the basis of a series of annual expeditions into the Polar regions. In pursuance of this project he

went N. in the summer of 1897 to take the necessary preliminary measures, such as securing the aid of the Eskimos, fixing the site of a station, etc. He returned in October of that year, bringing with him an immense mass of meteoric iron, or what is supposed to be such, from Cape York, Greenland, which was placed in the Museum of Natural History in New York city. On July 3, 1898, Lieutenant Peary again sailed on a search for the North Pole, going in the steamer "Hope" from St. John's Newfoundland, to Sidney, Cape Breton, and from there to Cape York, Baffin's Bay. At that place the party and stores were transferred to the "Windward," which has made several Arctic voyages. They carried provisions for four years. In September, 1901, word was received from Peary that he had rounded the Greenland archipelago (the extreme N. land known), and reached lat. 83° 50' N. He established his headquarters for the winter of 1901-1902 at Cape Sabine, with the plan of again attempting to reach the North Pole in the spring of 1902. He made a most courageous and dangerous effort to carry out that purpose, going on sledges over the ice until open water and icefloes made it impossible to proceed. In 1908-1909 he made his last attempt, and on April 6, 1909, reached the latitude of 90°, and the long sought-for goal was attained. He was promoted to rear-admiral and voted the thanks of Congress by special act in 1911; subsequently received high honors from various geographical and other societies; and in the World War was chairman of Nat. Aerial Coast Patrol Comm. Died, 1920. See ARCTIC EXPEDITIONS.

**Peat**, a deposit formed in bogs by the decay of vegetable matter, frequently consisting almost entirely of sphagnum, or bog moss.

**Peattie, Mrs. Elia Wilkinson**, an American journalist; born in Michigan, in 1862; connected with the Chicago Press.

**Peba**, called also the black tatou, an armadillo ranging from Texas S. to Paraguay.

**Pecan**, or **Pecan Nut**, a species of hickory and its fruit, growing in North America.

**Peccary**, the popular name for two species of small suilline mammals from

the New World, nearly allied. The collared peccary ranges from Arkansas S. to the Rio Negro, and seldom attacks other animals. The white-lipped peccary is rarely met with N. of British Honduras, or S. of Paraguay. It associates in large droves, is very pugnacious, and does not hesitate to attack man, hunters often having to take to a tree for safety.

**Peck, Harry Thurston**, born in Stamford, Conn., in 1856; professor of Latin at Columbia University, 1886-1910; editor of "The Bookman," of "Harper's Classical Dictionary," "The New International Cyclopedia" (20 vols.), "Students' Series of Latin Classics" (32 vols.), "The New Websterian (1912) Dictionary"; author of "The Semitic Theory of Creation," "The Personal Equation," "What is Good English?" "The Life of Prescott," "Twenty Years of the Republic," "Studies in Several Literatures," "The New Baedeker," "History of Classical Philology," etc. He died March 23, 1914.

**Peckill**. See CHI-LL.

**Peck, George Wilbur**, an American humorist; born in Henderson, N. Y., Sept. 28, 1840. Governor of Wisconsin, in 1891-1895. In 1883 he published "Peck's Bad Boy and his Pa"; in 1890-1891 was mayor of Milwaukee; in 1891-1895, governor of Michigan. He died April 16, 1916.

**Peck, Samuel Minturn**, an American poet; born in Tuscaloosa, Ala., in 1854. He was educated at the University of Alabama, and later studied medicine in New York. His publications include the songs, "Grape Vine Swing" and "The Knot of Blue"; the poems, "Cap and Bells," "Rhymes and Roses"; and fiction, "Alabama Sketches" and "Maybloom and Myrtle."

**Pecos River**, a river of New Mexico and Texas, which has a S. E. course of about 800 miles, and falls into the Rio Grande del Norte, but in summer is generally dry.

**Pedagogue**, in classical antiquity, a slave who led his master's children to school, places of amusement, etc., till they became old enough to take care of themselves. A teacher of young children; a schoolmaster.

**Pedagogy**, or **Pedagogics**, a term Anglicized from the German, sig-

nifies the SCIENCE OF EDUCATION OR TEACHING, for the systematic development of the human faculties. It has Mind, Matter, and Method as essential factors, and its ideal is to study the individual natures of youth, in order to ascertain the special functions or talents with which each is endowed, so as to develop them towards perfection by systematized methods of training.

This study is effected under three recognized divisions: physiology, the constitution of the body; psychology, the constitution of the mind; ethics and religion, the moral and spiritual nature.

The psychology of pedagogy embraces the scientific observation and study of children, mental pathology or morbid conditions, comparative psychology, or the growth and grades of intelligence, and empirical and educational psychology, the latter including apperception, or the essential mental operation in the act of learning.

The physiological aspect of pedagogy embraces physical education and hygiene, including anthropometry or body measurements, supervision of eyestrain, spinal curvature, overpressure, stammering, vocal efforts, the ventilation, sanitation, furniture, apparatus and equipment of school grounds and buildings, the gymnastic, calisthenic, Delsartian, Swedish and other athletic exercises.

The moral and spiritual side of pedagogy embraces ethics or manners, æsthetics which gives inspiration by a taste for and contemplation of the beautiful, and civil and religious instruction, which include Sunday-schools, and initiate the duties and rights of citizenship, the formation of religious sentiment and the recognition of a supreme moral force.

The principles and practice of Pedagogy comprise elementary, secondary and higher instruction, and school administration.

School administration and management embrace organization and discipline, the question of punishments, amusements and general exercises, the selection of text-books, libraries, and museum collections, supervision of studies, elective systems of study, examinations and degrees, legislation, and endowments, including federal and

state aid, land grants, and private benefactions.

Elementary instruction is typified by the kindergarten—children's garden or child-study institution, giving instruction in the rudiments of language, number and arithmetic, nature study, object lessons, geography, drawing and music. To the elementary also belongs the education of orphans and neglected children, of colored children—negroes, Indians, Eskimos, etc., and of defective children, blind, deaf mutes, mentally deficient, truants, incorrigibles and offenders, and compulsory education to combat illiteracy.

Secondary and higher instruction comprise the advanced forms of elementary education, together with ancient and modern languages, history, economics, politics and sociology, mathematics and science.

Higher instruction also embraces night and continuation schools, public lectures, college settlements, university extension courses, self-culture, and home education. Other forms of high pedagogy are found in the methods for manual and industrial training, typified in the sloyd, slojd, or Swedish series of manual exercises.

The highest pedagogic forms embrace the college and university courses for professional education, including training for teaching, theology, law, medicine and its sub-divisions—surgery, dentistry, pharmacy and nursing; fine arts comprising sculpture, drawing, painting, engraving, music and architecture; science embracing technology, agriculture, commerce, military and naval training; modern colleges for the education of women, and post-graduate courses.

The literature on every branch of Pedagogics is enormous and continually increasing. Reference to any special department is best made by consulting: the "Catalogue of Educational Literature of the U. S. Bureau of Education," Washington; the "Bulletin of the Books on Education in the Libraries of Columbia University," New York city; or the excellent bibliographies of Education by Prof. W. S. Monroe, by G. S. Hall and J. M. Mansfield and others.

CHARLES LEONARD STUART.

**Pedro I., Dom Antonio Jose D'Alcantara,** Emperor of Brazil,

eldest son of John VI., King of Portugal, elder brother of Dom Miguel, and nephew to Ferdinand VII., King of Spain; born in 1798, and was taken, in 1808, with the rest of the royal family, to Brazil. In 1822, the Brazilians having proclaimed their independence, chose Pedro for their emperor. The death of John VI., in 1826, left Dom Pedro the crown of Portugal. After abdicating the crown of Portugal in favor of his daughter, Dona Maria, he nominated his brother, Dom Miguel, regent; but scarcely had he quitted Portugal, when Dom Miguel took possession of the throne. In 1831 he was compelled to abdicate the throne of Brazil in favor of his son, Dom Pedro II. Returning to Europe, he raised troops in France and England, with which he, in 1833, drove Dom Miguel from the throne of Portugal, and placed the crown upon the head of his daughter. He was twice married; his first wife being Maria Leopoldina, Archduchess of Austria, and the second, Amelia, daughter of Prince Eugene de Beauharnais. He died in 1834.

**Pedro II., Emperor of Brazil;** born in Rio Janeiro, in 1825; succeeded to the throne on the abdication of his father, Dom Pedro I., in 1831. He assisted President Grant in opening the Centennial Exposition in Philadelphia in 1876; and was deposed by the revolution of 1889. Died in 1891.

**Peebles, James Martin,** an American physician; born in Whittingham, Vt., March 23, 1822; was a member of the Northwest Congressional Indian Peace Commission in 1868; United States consul to Trebizonde, Turkey, in 1869; and represented the Arbitration League at the Peace Conference in Berlin.

**Peekskill,** a village in Westchester county, N. Y.; on the Hudson river and the New York Central & Hudson River railroad; 42 miles N. of New York city; is surrounded by grand mountain scenery; manufactures fire brick, hats, underwear, and stoves; and contains the State Military Camp, Helping Hand Hospital, Mohegan Lake School, Field Library, and House of the Good Shepherd. Pop. (1930) 17,125.

**Peel, Sir Robert,** an English statesman; son of Sir Robert Peel,

a wealthy manufacturer; born in 1788, and studied at Harrow and Oxford. When just 21 years of age he entered Parliament, and thenceforth the sphere of his exertions and triumphs was in the House of Commons. In 1811 he was made under-secretary for the colonies, and in 1812, when only 24, he received the appointment of chief secretary for Ireland. After carrying his celebrated currency measure of 1819, he became, in 1822, home secretary. He became prime minister in 1841. He died in 1850, of internal injuries caused by a fall from a horse.

**Peele, John Thomas,** an American artist; born in Petersburg, England, in 1822; settled in New York city in 1835; early manifested a genius for portrait painting and went to Europe to study; returned to New York in 1846. Later, he devoted himself to genre painting, becoming a specialist in studies of child life. He died in 1897.

**Peepul, or Pipal,** also known as the Sacred Fig of India, a species of fig, somewhat resembling the banyan, but the branches not rooting like those of that tree. The tree is held sacred by the Hindus, because Vishnu is said to have been born under it.

**Peet, Stephen Denison,** an American clergyman and archaeologist; born in Euclid, O., Dec. 2, 1831. He became a Congregational minister, and an authority on the works of the mound builders and American archaeology in general. He died in 1914.

**Peirce, Benjamin,** an American mathematician; born in Salem, Mass., April 4, 1809; studied at Harvard, where in 1833 he became professor. His paper on the discovery of Neptune attracted universal attention, and his papers on the constitution of Saturn's rings were equally remarkable. He died in Cambridge, Mass., Oct. 6, 1880.

**Pekan,** Pennant's marten, a North American species, about four feet long; it often steals the fish used to bait traps, whence it is sometimes called the fisher.

**Pekin, or Peking,** the capital of the Chinese republic, province of Chih-le, or Pechili, is a vast sandy plain, between the Pei-ho and its important affluent, the Hoang-ho, 562 miles N. W. of Nankin, and 100 miles W. N.

W. of the Gulf of Pechili, in the Yellow Sea. It consists of two contiguous cities, each separately surrounded by walls, and together entered by 16 gates. The entire circumference is 25 miles. The northern city, which is nearly a perfect square, consists of three enclosures. The outer one is used by Chinese traders. The second enclosure contains the residences of the dignitaries of the empire and foreign legations, the national literary institutions, and the temples of Ancestors and Peace, and is inhabited mostly by the Manchus. The inner enclosure, or "forbidden city," surrounded by walls of yellow tiles, 2 miles in circumference, hence called the "Yellow Wall," contains the palaces of the emperor and empress. The southern city, called the Wai-ching, or "outer city," is also square, and occupied by the Chinese, and is both the seat of business and the residence of most of the population. The wall is 30 feet high, 25 feet thick at the base, and 12 feet at the top. That of the imperial city is 40 feet high. The principal streets are very wide and regular, running between opposite gates. The houses are generally one story high, and built of brick. Of the ornamental buildings, the most conspicuous are those commonly called triumphal arches. They consist of a large central gateway, with small ones on each side, all covered with narrow roofs, and like the houses are splendidly gilded, varnished, and painted. Peking is indebted for its importance to its being the residence of the emperor and the seat of government. The country round the city being sandy and poor, a large portion of its supplies are brought from a distance — partly from sea by the Pei-ho, but principally by the Grand canal and the Eu-ho, which connect it with Nankin, and most of the E. provinces. The early history of Peking is involved in obscurity. Kublai Khan rebuilt it, and made it his capital in 1260. The Mongol dynasty, founded by Kublai Khan, continued to occupy this city till it was expelled from China, in 1367. In 1421, the third emperor of the Chinese dynasty of Ming transferred his residence thither from Nankin, since which it has been the capital of the empire. During the "Boxer" uprising of 1900 the various

foreigners in Peking were besieged in the English legation. For weeks they were given up as lost, but they managed to hold out till the arrival of the foreign troops. Pop. official census (1925 Est.) 7,659,503.

**Pelagians**, a sect that arose about the beginning of the 5th century. Their founder was Pelagius, a monk, a native of Britain, whose original name was Morgan. He taught that man is capable of a religious life, without the grace of God, and that grace is given, not freely, but according to the merits of the recipient.

**Pelagic Sealing**, the taking of seal in the open sea.

**Pelamis**, a genus of sea snakes, with a single species, ranging from Madagascar to New Guinea, New Zealand, and Panama.

**Pelasgian**, one of an ancient and widely diffused prehistoric tribe which was the common parent of the Greeks and of the earliest civilized inhabitants of Italy. The origin of this people is lost in myth. Traces of them are found in Asia Minor and Italy. The term Pelasgi was used by the classic poets for the Greeks in general. Some Albanian tribes are supposed to be of Pelasgic descent.

**Pelew Islands, or Palau**, a group in the Pacific formerly belonging to Spain, lying S. E. of the Philippines, at the W. extremity of the Caroline Archipelago, with which they are sometimes classed. There are about 200 islands, and surrounded with coral reefs. Total area, 170 square miles. The principal is Babelthouap or Babeltop. The soil is rich and fertile, and the climate healthy. Bread fruit, cocoanuts, sugar cane, palms, areca nuts, yams, etc., are grown. Turtles, trepang, and fish abound on the coasts. The inhabitants, about 10,000 in number, are of the Malay race. The men go entirely naked and the women nearly so. They are described as being good-natured, and have peculiar social institutions. The islands were discovered by the Spaniards in 1543, and visited again in 1696. In 1899 Spain sold this group, with the Carolines and all of the Ladrões excepting Guam, to Germany.

**Pelias**, the adder, or common viper. No teeth in upper maxillaries, except



the poison fangs; a row of small teeth on the palatine bone, on each side of the palate.

**Pelican**, a large piscivorous water fowl, with an enormous pouch dependent from the flexible branches of the lower mandible, but capable of being contracted when not in use as a depository for food. The species are widely distributed, and frequent the shores of the sea, rivers, and lakes, feeding chiefly on fish, which they hunt in shallow water, the pelican of the United States being the only species which dives for its prey. The common pelican is about the size of a swan, though its enormous bill and loose plumage make it look considerably larger; it is white, slightly tinged with flesh color, and the breast feathers become yellow in old birds.

**Pelican, The**, the ship in which Sir Francis Drake made his voyage around the world. He left Plymouth with four ships besides the "Pelican," Nov. 15, 1577, and completed his journey Sept. 15, 1580. The "Pelican" was the only ship he brought back with him, and it was for a long time carefully preserved by order of Queen Elizabeth. When finally broken up a chair was made from its timbers by John Davis, the Arctic navigator, which is now in the Bodleian Library.

**Pelissier, Aimable Jean Jacques, Duke of Malakoff**, a marshal of France; born near Rouen in 1794. He entered the army at the age of 19, and distinguished himself in Africa and was created Lieutenant-General in 1848. He distinguished himself in the storming of the Malakoff Tower at Sebastopol, Sept. 8, 1855. He was soon after created Marshal and Duke of Malakoff. He died in 1864.

**Pellagra**, a disease common among the peasantry of Northern Italy, the Asturias, Gascony, Rumania, and Corfu, caused by living on maize affected by a parasitic fungus. In 1911 the disease was very prevalent in the United States, especially in Kentucky, Tennessee, North and South Carolina, and Georgia, where more than 50,000 cases were officially reported, the majority being women. It was believed, as in Italy, that the scourge arose from the ingestion of corn products made from diseased stock.

**Pelletier, Sir Charles Alphonse Pantaléon**, a Canadian official; born in Rivière Ouelle, Quebec, Jan. 22, 1837; was called to the bar in 1860; member of the Commons in 1869-1877, of the Provincial Assembly in 1873-1874, and Senator in 1877-1905; Speaker of Dominion Senate in 1896-1901; Quebec City Solicitor for 40 years; Judge Superior Court, Quebec Province, in 1905-1908; then became Lieutenant-Governor of the Province.

**Pellico, Silvio**, an Italian patriot; born in Saluzza, Piedmont, in 1789; best known for his tragedy, "Francesca da Rimini." The volume on which his fame rests tells the story of his 10 years' imprisonment. He died in 1854.

**Pelopidas**, a Theban general, the friend of Epaminondas and the associate of his victories. When the Spartans conquered Thebes, Pelopidas went to Athens, where he assembled his exiled countrymen, with whom he returned, seized on Thebes, and expelled the invaders. Afterward he defeated the Lacedæmonians at Tegyra, and shared with Epaminondas the victory of Leuctra. Pelopidas being sent ambassador to Alexander, the tyrant of Phææ, was thrown into prison; but on the appearance of Epaminondas he obtained his release. He next went to the court of Persia, and after his return commanded the forces sent to the relief of Thessaly, where he fell in 364 B. C.

**Peloponnesus**, the ancient name of the Morea. Among its most important cities were the Sparta in Laconia, and Argos the capital of Argolis. Sparta acquired, after the Messenian war, a decided supremacy over the other states, and disputed the supremacy with Athens in a war of almost 30 years' duration (431-404 B. C.) — the famous Peloponnesian War, of which the history has been written by Thucydides. After the Roman conquest, the Peloponnesus formed part of the province of Achaia, and subsequently part of the Byzantine empire.

**Pelvis**, the bony, archlike basin of the human body, supporting the lower or hinder limbs.

**Pemba**, a coral island off the E. coast of Africa; 50 miles N. E. of

## Pemberton

Zanzibar Island, length 46 miles, breadth  $4\frac{1}{2}$ ; area, 372 square miles.

**Pemberton, Max**, an English novelist; born in Birmingham, England, June 19, 1863. He was a contributor to "Vanity Fair," and editor of "Chums," a boys' paper, and in charge of "Cassell's Magazine." He has published a number of stories.

**Pembroke**, town, out-post, and capital of Renfrew county, Ontario, Canada; on the Muskrat river, Allumette lake, and the Grand Trunk and Canadian Pacific railways; 104 miles N. W. of Ottawa; has good water-power from the river; and is engaged in lumbering and manufacturing. Pop. (1921 Est.) 6,200.

**Pen**, an instrument for writing with a fluid. Pens of some sort have been in use from very early times, adapted to the material on which the characters were to be inscribed. The metallic stilus for the production of incised letters was probably the earliest writing implement. It was used by the Romans for writing on tablets coated with wax; but both they and the Greeks also used what is the true ancient representative of the modern pen, namely, a hollow reed, as is yet common in Eastern countries. It has been asserted that quills were used for writing as early as the 5th century A. D. In 1803 Wise produced steel pens of a barrel form, mounted in a bone case for carrying in the pocket. They were of indifferent make, and being expensive, were very little used. Joseph Gillott commenced the manufacture about 1820, and succeeded in making the pen of thinner and more elastic steel, giving it a higher temper and finish. Mr. Gillott was followed into the same field by Mr. Perry and others, and their improvements so reduced the cost and raised the quality, that a gross of better pens are now sold by the same makers at less than one-sixth of the price of a single pen in 1821. Gold pens tipped with minute particles of iridium are now in extensive use, and a good one will last for years. Fountain pens and penholders, to carry a considerable supply of ink and to discharge it in an equal manner, were invented by Joseph Bramah.

**Penal Laws**, laws which prohibit an act, and impose a penalty for the commission of it.

## Pendleton

**Penal Servitude**, a form of punishment in English criminal law, substituted, in 1853, for the punishment of transportation. It consists in imprisonment with hard labor for a term of years, from two up to the duration of life. The term is not used in the United States.

**Penance**, in Roman Catholic theology and ritual: 1. The virtue which inclines the soul to detest sin for its own sake—that is, because it is an offense against God. 2. The outward acts by which sorrow for sin is evinced. 3. The satisfaction which a priest imposes on the penitent before giving absolution, often called sacramental penance.

**Penang, Pulo-Penang**, or **Prince of Wales Island**, an island belonging to Great Britain, lying at the N. entrance of the Straits of Malacca, off the W. coast of the Malay Peninsula, from which it is separated by a channel 2 to 5 miles across; area, 107 square miles. Penang was made over by treaty to the East India Company in 1786 by the Rajah of Quedah, and with Province Wellesley, a long strip of the Malay Peninsula opposite (area, 270 square miles), it now forms one of the Straits Settlements, having a resident councillor to control administration. Pop. (1921) 283,400.

**Penates**, the Roman gods of the storeroom and kitchen. The family hearth, which formerly stood in the atrium, was their altar, and on it their images, two in number, were placed, with the image of the Lar between them. These penates were represented dancing and elevating a drinking horn in token of joy and plenty. The calends, nones, and ides of each month were set apart for their worship, as were the caristra (Feb. 22) and the saturnalia. Each family had its own penates, and the State had its public penates. The origin of these gods is extremely doubtful. As was the case with the Lares, their name was a synonym for home.

**Pencil**, a name applied to instruments for writing, drawing, or painting, differing as much in their construction as in the use to which they are applied.

**Pendleton, George Hunt**, an American statesman; born in Cincin-

nati, O., July 25, 1825. He acted as congressman from 1856 to 1865, having been elected on the Democratic ticket. He was a candidate for the vice-presidency on the Democratic ticket in 1864, with George B. McClellan. Before his appointment as United States minister to Germany by President Cleveland, in 1885, he represented Ohio in the United States Senate, and was an exponent of civil service reform. He died in 1889.

**Pendleton, Louis (Beauregard),** an American novelist and writer of juvenile literature; born in Georgia in 1861. His works deal principally with Southern scenes and characters.

**Penelope,** a celebrated Grecian princess, daughter of Icarus, wife of Ulysses (Odysseus), and mother of Telemachus. According to the Homeric legend, Ulysses, during his long wanderings after the fall of Troy, was generally regarded as dead, and Penelope was vexed by the urgent suits of many lovers, whom she put off on the pretext that she must first weave a shroud for Laertes, her aged father-in-law. To protract the time, she undid by night the portion of the web she had woven by day.

**Penfield, Frederic Courtland,** an American diplomat; born in Connecticut, April 23, 1855; engaged in journalism in Hartford; vice-consul-general at London, 1885; consul-general to Egypt, 1893-1897; became Ambassador to Austria-Hungary, 1913; writings: "Present Day Egypt," "East of Suez," and contributions to reviews, etc. In the early days of the World War he took charge of the affairs of Great Britain, France, Italy, and Japan in Austria-Hungary. D. 1922.

**Penguin,** aquatic birds confined to the high S. latitudes of both hemispheres. They have no quills in their wings, which are utterly useless for flight, though they move freely at the shoulder joint, forming most efficient paddles, and are usually worked alternately with a rotatory motion. In standing, the penguin preserves an upright position, generally resting on the tarsus, which is widened like the foot of a quadruped.

**Peninsular Campaign,** the name of the campaign conducted by General George B. McClellan in 1862, on the

peninsula between the York river and its tributaries and the James river.

**Peninsular War,** the war carried on in the beginning of the 19th century in Spain and Portugal by the British forces, aided by the native troops, against the French. Sir Arthur Wellesley, afterward the Duke of Wellington, landed, with 10,000 British troops, at Figueras, in Portugal, Aug. 1-3, 1808, and on the 21st defeated the French at Vimiera. On August 30, the Convention of Cintra was signed, by which Junot agreed to evacuate the country. Wellesley returning home, the command of the army, now increased to 20,000 men, was given over to Sir John Moore, who was forced by Soult to fall back on Corunna, where a battle was fought on Jan. 16, 1809, in which the former lost his life. Wellesley again received command of the army, and, after a series of sanguinary and generally successful combats, drove the French across the Pyrenees, entering France on Oct. 7, 1813.



PENGUIN.

**Penitentiary,** a prison in which convicted offenders are confined and

subjected to a course of discipline and instruction with a view to their reformation. Misdemeanants and persons guilty of lesser felonies are confined therein.

**Penitentiary**, one of the offices of the Roman Catholic Curia, taking special cognizance of matters relating to the confessional, and dispensations from such impediments to marriage as are not diriment. The dignitary who presides over the office described above. He is a cardinal priest, and must be a doctor of theology or canon law.

**Penn, Sir William**, an English admiral who greatly distinguished himself against the Dutch in the 17th century: born in Bristol in 1621, entered the navy at an early period, and was captain at the age of 23. After the restoration he was knighted, and died in Essex in 1670.

**Penn, William**, founder of the State of Pennsylvania; son of the preceding; born in London, Oct. 13, 1644. He turned Quaker, was taken up for preaching, and sent to prison; but was released through the interest of his father; was sent to the Tower, on account of a book which he had written; and, while there, he composed his principal work, entitled "No Cross, No Crown," intended to show the benefit of suffering. On his release, he resumed his former labors, and was apprehended, with some others, and tried for preaching at a conventicle in Gracechurch Street. The jury persisted in finding them not guilty, and were fined for acting contrary to the dictates of the judge. In 1681 he obtained from the crown, in lieu of the arrears due his father, the grant of the province in North America, and it was Charles II. who, in honor of Penn proposed the name Pennsylvania. Accompanied by emigrants, Penn sailed from Deal Sept. 5, 1682, for America, and landed at New Castle, Del., Oct. 24, and at Upland, Pa. (now Chester), Oct. 29, 1682. The work of organization was rapid. A few Swedes and Dutch had previously settled in Pennsylvania, but colonists from various regions of the Old World now poured in. Universal toleration was proclaimed, a charter of liberties was solemnly consecrated, and a democratic government was established. In his dealings with the Indians and their

chiefs, Penn manifested his accustomed magnanimity and justice. The capital city, Philadelphia, was planned on a scale commensurate with Pennsylvania's expected greatness. Penn's family was in England. Hearing that his wife was ill he, intrusting his unfinished undertakings to such men as he deemed competent, hurried anxiously back. The overthrow of James was in more than one respect a misfortune for Penn. In the spring of 1690 he was arrested on the charge of holding treasonable correspondence with the dethroned monarch. The absurdity of the charge being swiftly and glaringly evident, Penn was set at liberty. Yet, though his conduct continued to be blameless, he was, by an order in council, stripped, March 14, 1692, of his title to the Pennsylvanian government—a tyrannical act involving his utter ruin; for, besides that he had risked his whole substance in the Pennsylvanian experiment, his estates, both in England and in Ireland, had been grievously mismanaged by incompetent or dishonest overseers. An order in council capriciously restored to Penn, in 1694, that Pennsylvanian government of which an order in council had so capriciously robbed him. But the ownership of territories so extensive was almost barren to him. A visit to his Irish estates preluded Penn's second expedition to the New World. His family went with him to America, though rather from necessity than choice. Penn's residence in the colony was more beneficial to the colonists than to himself. In 1701 he returned to England, and, being encumbered with debts, endeavored to negotiate the sale of Pennsylvania to the crown for \$60,000. This negotiation was interrupted in 1712, through his being attacked by an apoplectic fit, which, happening twice afterward, greatly impaired his mental faculties. He survived for six years longer, but with a constitution much shattered, and quite unfitted for any serious employment. Penn died July 29, 1718; and was buried at the village of Jordan, Buckinghamshire.

**Pennant**, a small flag or banner. In naval affairs, a long, narrow piece of bunting carried at the mast-heads of vessels of war.



**Penn College**, a coeducational institution in Oskaloosa, Ia.; founded in 1873 under the auspices of the Society of friends.

**Pennell, Joseph**, an American etcher and illustrator, born in Philadelphia in 1860. In collaboration with his wife, Elizabeth Robins Pennell, he produced several books, the most notable being a biography of James McNeil Whistler. It is as an illustrator, lithographer and etcher, however, that he is distinguished. His work is of the highest intellectual type and marked by an extraordinary treatment of light and dark. It includes numerous Italian and English subjects. Some of his works are "Thames Embankment," "Nelson Monument," "Pictures of War Work in America."

**Pennington, Alexander Cummings McWhorter**, an American military officer; born in Newark, N. J., Jan. 8, 1838; was graduated at the United States Military Academy in 1860; served through the Civil War, during the latter part in command of a brigade in the Army of the Potomac, and was brevetted Brigadier-General of volunteers. After the war he served at various army posts, was promoted Brigadier-General, U. S. A., in 1899 and was retired Oct. 17, of that year. He died Nov. 30, 1917.

**Pennon, or Penon**, a small flag or streamer half the size of the guidon, but shaped like it, of a swallow tail form, attached to the handle of a lance or spear.

**Pennsylvania**, a state in the North Atlantic Division of the North American Union, bounded by New York, New Jersey, Delaware, Maryland, West Virginia, Ohio, and Lake Erie; one of the original 13 States; capital, Harrisburg; number of counties, 67; area, 45,126 square miles; population (1920) 8,774,347; (1930) 9,640,802.

The State presents three well defined physical divisions, the E. plain, middle hills, and W. highlands. A number of parallel ridges cross it from N. to S. with a maximum altitude of 2,500 feet. Lake Erie forms 45 miles of the N. boundary of the State and has an excellent harbor at Erie.

Pennsylvania ranks first in the United States in the amount and value

of her commercial mineral products. The principal products are coal, cement, natural gas and clay products. In 1928 the value of the total mineral output was \$881,490,000. Pig iron led with 12,423,000 long tons, followed by anthracite coal, 76,734,000 long tons, bituminous coal, 124,720,000 long tons, Portland cement, 13,135,000 barrels, and petroleum, 9,876,000 barrels.

In 1928 there were 11,208 miles of steam and 4,032 miles of electric railway, the former representing 11 of the great systems.

As an agricultural state Pennsylvania ranks high. In 1926 the value of all farm property was estimated at \$1,170,171,554. There were produced 46,470,000 bus. of corn, 29,913,000 bus. of oats, 25,740,000 bus. potatoes, 20,138,000 bus. wheat.

On Jan. 1, 1930, the State reported 1,440,000 cattle, 889,000 cows, 615,000 swine, 467,000 sheep, and 346,000 horses.

Pennsylvania ranks third in the United States in the value of her manufactures. In 1927 it was reported that there were 17,314 manufacturing plants, employing 987,414 wage earners, paying \$1,315,993,000 for wages, \$3,728,062,000 for raw materials and having a combined output valued at \$6,715,563,000.

The imports for the year 1929 were valued at \$243,547,000; and the exports \$123,862,000.

Pennsylvania furnished about 365,000 men for the Civil War and was the scene of the famous battle of Gettysburg. The Soldiers' National Cemetery contains the graves of 3,575 soldiers, who represent 18 states. In 1876 the Centennial Exposition was held at Philadelphia; in 1889 occurred the Johnston flood, in 1892 the Homestead strike; in 1901 the anthracite coal strike. The statue placed in the new capitol in 1910 is considered the best work done by an American sculptor. The artist was George Grey Barnard.

In 1928 there were 2,184,025 pupils enrolled in public, private and parochial elementary and secondary schools. For higher education there were 1,187 public and private high schools and academies with 353,320 pupils under 14, 856 teachers; 68 universities, colleges



and professional schools with 67,996 students under 5,556 professors and instructors. Chief among them is the University of Pennsylvania.

The governor is elected for a term of four years and receives a salary of \$18,000 per annum. Legislative sessions are held biennially in odd years, beginning on the first Tuesday in January, and are unlimited in length. The Legislature has 50 members in the Senate and 206 members in the House. There are 36 Representatives in Congress.

The country about Delaware Bay was first settled by the Swedes, and then passed first under Dutch, and then under the English jurisdiction generally established in 1664. In 1681 the territory W. of the Delaware was granted by royal charter to William Penn who colonized it; and, by the industry and high character of the Society of Friends, by cultivating peace with the Indians, and encouraging immigration, founded a flourishing State, which, long before the Revolution became the seat of learning, wealth, and refinement.

**Pennsylvania Dutch**, a German dialect mixed with English, spoken in Pennsylvania by German settlers and their descendants.

**Penny**. In the United States the term penny is commonly used for "cent," the 100th part of a dollar. It consists of 95 per cent. of copper and 5 per cent. tin and zinc. There are 1,000,000,000 pennies in circulation throughout the country and the Philadelphia mint is turning them out at the rate of 4,000,000 a month to keep up the supply. The British penny is the 12th part of a British shilling, and worth about two cents.

**Pennyroyal**, a species of mint, sometimes grown in gardens for its reputed medicinal qualities. The name pennyroyal is given also to a small plant, allied to the mints, and having, like them, a pleasant aromatic smell and a warm pungent taste.

**Pennyweight**, a Troy weight, containing 24 grains, each grain being equal to a grain of wheat from the middle of the ear, well dried. Twenty pennyweights make one ounce Troy weight.

**Pensacola**, city, port of entry, and capital of Escambia county,

Fla.; on Pensacola bay and several railroads; 10 miles N. of the Gulf of Mexico; has one of the finest harbors on the Gulf, large export trade in naval stores, cotton, grain, phosphates, coal, iron, and tobacco, manufactures of lumber, cotton compressors, and fertilizers, and extensive fisheries; and contains a Federal navy-yard, Federal Marine Hospital, Fort Pickens, and the remains of Fort McRea. Pop. (1930) 31,579.

**Penshurst, Charles Hardinge**, 1st Lord, a British administrator; born in Kent, England, in 1858; brother of 3d Viscount Hardinge; entered the diplomatic service in 1881; was stationed successively at Constantinople, Berlin, Washington, Bucharest, Teheran, and St. Petersburg; became Ambassador to Russia in 1904, and Viceroy of India in 1910.

**Pension**, an allowance of money, in stipulated amounts and in periodical payments, made by government to persons in recognition of past service, military, naval, civil, or judicial. The payment of pensions in the United States is regulated by special Congressional enactment. The system has been in operation nearly ever since the adoption of the Federal Constitution. Pensions are generally predicated and allowed on account of some disablement which occurred in the military or naval service of the United States while in line of duty. The year of the largest number of pensioners of all classes was 1902, when there was a total of 999,446. The year 1916 had the smallest number on the rolls since 1891 (709,572), and the total payments aggregated \$159,155,090, but the total payments that year were the largest on record (\$161,973,703). From the foundation of the Government to June 30, 1916, the total amount paid out for pensions amounted to \$5,054,630,727.

**Pentecost**, one of the three greatest Jewish festivals. Its Greek name was given because it was held on the 50th day, counting from the second of the Passover, whence it was called in Hebrew the Feast of Weeks. By this account the enumeration of the weeks was to be from "such time as thou beginnest to put the sickle to the corn." It was called also the Feast of Harvest.

**Pentecost, George Frederick**, an American clergyman; born in Albion, Ill., Sept. 23, 1842; entered Georgetown University but left to volunteer for the Union army; was chaplain in 1862-1864, and filled various pastorates in different parts of the country in 1864-1880. In 1887 he engaged in evangelical work in Scotland and then went to India on a special mission to the English-speaking Brahmins. He was called to the First Presbyterian Church at Yonkers, N. Y., in 1897. He wrote: "Boyhood of Christ"; "Bible Studies"; etc.

**Penumbra**, a faint shadow thrown by a luminous body. It is brighter than the true shadow, though less so than the luminous body itself. It is a modification of the true shadow produced by the commingling with it of rays emitted by a portion of the luminous body. In an eclipse of the moon, the rays which have just grazed the edge of the earth are bent inward by the refraction of the atmosphere, besides having become tinged with a ruddy or copper hue. Falling on the moon, then in shadow, they often render it faintly visible, and though of a copper hue, yet bright enough to permit markings on its surface to be seen. Yet at this time the moon is so much behind the earth that it cannot be reached by direct rays from the sun.

**Peonage**, a system of agricultural servitude common in Mexico, and some other parts of Spanish America. The peon in debt to his employer was by the Spanish system bound to labor for his employer till the debt was paid.

**Peoria**, city and capital of Peoria county, Ill.; on the Illinois river and over a dozen railroads; 160 miles W. of Chicago; is in an important coal-mining region; has the most extensive manufactories of proof spirits, glucose, and farming implements in the country; also manufactures cellulose, cereal foods, flour, strawboards, and machinery; manufactures exceed \$65,000,000 in value of annual output; contains the Bradley Polytechnic Institute, Spalding Institute, Federal Building, large Coliseum, Soldiers' Monument, and several notable public buildings; and has an assessed property valuation of nearly \$50,000,000. Pop. (1928 Est.) 84,500.

**Pepin, The Short**, a King of France, the first of the Carolingian kings. He was at first mayor of the palace under Childeric III.; but in 752 he dethroned that monarch and confined him in a monastery. Having requested and obtained the sanction of the Pope, Pepin was constituted king. He assisted Pope Stephen III. against the Longobards, defeated the Saxons, Bavarians, and other German nations, and united Aquitaine to his crown. After a reign of 16 years, he died in St. Denis, in 768. His son Charlemagne succeeded him as King of the Franks.

**Pepper, Charles M.**, journalist, traveler and author; born in Ohio, Nov. 11, 1859; graduated at the Wooster University, in 1882. He was the Washington correspondent of the "Chicago Tribune" for many years. Subsequently political correspondent of "New York Herald." Correspondent in Cuba, Porto Rico, Mexico, Central America, South America, and Hawaii, for "Washington Star" and a syndicate of papers. Commissioner in Cuba for St. Louis Exposition. Was appointed by President McKinley as delegate to the Second International American Conference, which was held in Mexico, 1901-1902. Appointed by President Roosevelt as Pan-American Railway commissioner. He is the author of "Tomorrow in Cuba," "Everyday Life in Washington," and other books.

**Peppermint**, a mint with oblong, lanceolate, serrate, glabrous leaves; pedicels and flowers nearly smooth; flowers in cylindrical spikes, interrupted below. Oil of peppermint, the oil distilled from the fresh flowers of peppermint. It enters into the composition of peppermint water, essence of peppermint, and spirit of peppermint. It is stimulant and carminative, and is used to correct flatulence and griping in the intestinal canal, and to mask the nauseous taste of some medicines.

**Pepper Root**, a perennial herbaceous plant, a native of North America, with pairs of ternate leaves, and racemes of white flowers; the root of which has a pungent mustard-like taste, and is used as a condiment.

**Pepsin**, an azotized ferment, related to the proteids, and contained in gastric juice. It possesses the power, in

conjunction with hydrochloric acid, of dissolving the insoluble proteids and converting them into peptones. **Pepsin** is prepared from the stomach of the pig or calf on a commercial scale, and is usually employed in the form of pills or dissolved in wine.

**Pepys, Samuel**, an English author, secretary to the admiralty in the reigns of Charles II. and James II.; born in Bampton, Huntingdonshire, in 1632, and educated at Cambridge. He early acquired the patronage of Sir Edward Montagu, afterward Earl of Sandwich, who employed him as secretary in the expedition for bringing Charles II. from Holland. On his return he was appointed one of the principal officers of the navy. In 1673, when the king took the admiralty into his own hands, Pepys was appointed secretary to that office, and performed his duties with great credit. During the excitement of the Popish Plot he was committed to the Tower, but was after some time discharged without a trial, and reinstated in his office at the admiralty, which he held till the abdication of James II. He was president of the Royal Society for two years; but his title to fame rests upon his "Diary" (1659-1669), which is a most entertaining work, revealing the writer's own character very plainly, giving an excellent picture of contemporary life, and of great value for the history of the court of Charles II. He died in 1703.

**Peguet, Fort**, an old Indian fort on Peguet Hill, about 8 miles N. E. of New London, Conn.

**Peguots**, or **Peguods**, a tribe of American Indians, a branch of the Mohegans, were warlike and powerful in the country round the Thames river when Connecticut was first settled, and made treaties with the Dutch and English. Hostilities, however, broke out in 1637, and the tribe was cut to pieces and scattered; yet a few descendants may be found at Green Bay, Wis.

**Perch**, a genus of acanthopteron fishes, forming the type of the perch family (Percidae). The common perch (*Perca fluviatilis*) is a common tenant of fresh-water lakes and rivers. It is colored a greenish-brown on the upper parts, the belly being of a yellowish or golden-white. The sides are

marked with from five to seven blackish bands. The average weight is from 2 to 3 pounds. The perch is a voracious feeder, devouring smaller fishes, worms, etc. The female deposits her eggs, united by a viscous matter, in long bands, on aquatic plants.

**Pereira da Silva, Joao Manuel**, a Brazilian historian; born in Rio de Janeiro, in 1817. He wrote: "History of the Founding of the Empire of Brazil"; "Brazilian Plutarch"; "Jerônimo Corte-Real"; "Second Period of the Reign of Dom Pedro I. in Brazil"; etc.

**Perennial**, lasting or continuing without cessation throughout the year; hence, perpetual; unceasing; never failing; as perennial fountains. Continuing without intermission, as a fever. In botany, one of those plants whose roots remain alive more years than two, but whose stems flower and perish annually.

**Perez de Zambrana Luisa**, a Cuban story-writer and poet; born in El Cobre, near Santiago, in 1837. Several of her poems have been translated into Italian and French.

**Perfumes**, substances emitting an agreeable odor, and used about the person, the dress, or the dwelling, having also some value as disinfectants. Perfumes are partly of animal origin as civet, musk, etc., but are chiefly simple, or mixed essences of flowers.

**Pericardium**, a conical membranous sac containing the heart and the commencement of the great vessels, to the extent of about two inches from their origin.

**Pericles**, a great Athenian statesman; born in Athens about 495 B. C., of a noble, influential and wealthy family. He received a careful education from the most eminent teachers. He applied himself to the study of philosophy under the guidance of Anaxagoras, who had a most powerful influence on him, and remained one of his most intimate friends. To his other acquirements he added that of extraordinary eloquence, and thus prepared, he began to take part in public affairs about 469 B. C., and the popular party soon recognized him as their chief. Pericles was great as a general, and he displayed extraordinary valor

at the battle of Tanagra; he commanded the expedition against Sicyon and Acarnania; recovered Delphi from the Spartans, and quelled the revolt of Eubœa. In 444 B. C. he became sole ruler of Athens, and the aim of his policy was to extend and strengthen her empire, and to make the people worthy of their position. Under his administration the navy was increased, commerce extended, general prosperity advanced, and Athens adorned with noble buildings. In 444 B. C. Pericles established a democratic constitution in Samos, and a counter revolution taking place, he besieged the town, and after nine months reduced it, a success which procured him extraordinary honors on his return. Pericles directed Athens during the first two years of the Peloponnesian War, in the second year of which the plague broke out at Athens, and the popular discontent vented itself in the prosecution of the great ruler. He was fined, but soon regained his influence. The plague carried off many of his friends and relatives, and, last of all, his favorite son, Paralus. This loss broke his heart, and after a lingering sickness he died 429 B. C. He left a son by Aspasia, who took his father's name, and was legitimated by the people.

**Perier, Casimir**, a French statesman; born in Grenoble, Oct. 21, 1777. A Parisian banker, he condemned in 1817 the financial policy of the ministry and thereby won a seat in the Chamber of Deputies. In 1828 he held the portfolio of finance under Martignac, but resigned it in August of the next year. Having taken an active part in the July revolution (1830), he was rewarded with a seat in the cabinet. When Laffitte became president of the council (Nov. 2), Perier undertook the presidency of the Chamber of Deputies, and on March 13, 1831, succeeded Laffitte as minister. Died 1832. His son Auguste, adopted the name of Casimir-Périer (q. v.).

**Perigee**, the point in the moon's orbit at which she is nearest the earth.

**Perihelion**, or **Perihelium**, the part of a planet's or comet's orbit where it is nearest the sun, as opposed to aphelion.

**Perim**, a barren island, and coaling and telegraph station, belonging to Great Britain, in the Strait of Bab-

el-Mandeb, at the S. entrance to the Red Sea. It is about  $3\frac{1}{2}$  miles long by  $2\frac{1}{2}$  wide, crescent-shaped, the horns embracing a spacious harbor.

**Periodicity**, the disposition of certain things or phenomena to recur at stated periods. It denotes the regular or nearly regular recurrence of certain phenomena of animal life, such as sleep and hunger. The first indication of a diseased state is generally a disturbance of the natural or acquired periodicity of the various functions of life.

**Periosteum**, a dense lining membrane covering the whole surface of bone, except the articulations, which have a thin cartilaginous layer. As long as a single portion of periosteum remains alive bone is capable of being reproduced.

**Peritonitis**, inflammation of the peritoneum; it is exceedingly painful and dangerous, from its extent and connection with important organs. Peritonitis may exist either as an acute or chronic disease. In the former there is usually great pain and tenderness of the abdomen, accompanied with fever, and a frequent, small, and hard pulse. Its causes are various, as by cold, mechanical injuries of the peritoneum, the development of tumors, etc.

**Periwinkle**, a genus of marine Gastropods. The commonest is abundant between tide marks on the rocks, and is often collected and used for food. It is boiled in its shell, extracted as eaten, and is very palatable. Periwinkles crawl about under water, but usually remain passive when left uncovered by the tide. Without water they can survive for many hours, and they are also able to endure a considerable freshening of the salt water. They feed on sea weeds, and are often useful in keeping beds of young oysters from being smothered.

**Perjury**, the taking of a wilful false oath or affirmation, by a witness lawfully required to depose the truth in a matter of some consequence to the point in question. A false oath, therefore, taken before no court, or before a court incompetent to try the issue in question, does not constitute the offense of perjury at common law. Perjury is a felony.

**Perkins, Charles Callahan**, an American writer and lecturer on art; born in Boston, in March, 1823; was a prominent art critic and lecturer, and president of the Boston Art Club (1869-1879). He died in Windsor, Vt., Aug. 25, 1886.

**Perkins, Frederic Beecher**, an American miscellaneous writer; born in Hartford, Conn., Sept. 27, 1828. He received his education at Yale; studied law, and was admitted to the bar in 1851. He was librarian of the San Francisco Library from 1880 to 1887. He died in Morristown, N. J., Jan. 29, 1899.

**Perkins, George Hamilton**, an American naval officer; born in Hopkinton, N. H., Oct. 20, 1836; was graduated at the United States Naval Academy in 1856; took part in numerous naval engagements in the Civil War, chiefly on the Mississippi; and was in the battle of Mobile Bay. He was promoted commodore in 1896. He died in Boston, Mass., Oct. 28, 1899.

**Perkins, Jacob**, an American inventor; born in Newburyport, Mass., in 1766. He early became distinguished for his ingenuity, and when 21 years of age, he was employed by the commonwealth of this State to make new dies for copper coinage. Becoming interested in the subject of steam artillery, Perkins constructed a gun in which steam generated at an enormous pressure operated as the propelling power instead of gunpowder. His invention was satisfactorily tested in presence of the Duke of Wellington and a number of artillery officers, but was finally condemned as being inapplicable to modern warfare. He died in London, in 1849.

**Perkins, James Breck**, an American lawyer and historical writer; born in St. Croix Falls, Wis., Nov. 4, 1847. His chief works are: "France under Mazarin"; "France under the Regency"; "France under Louis XV.," etc. He died in 1910.

**Perkins, Justin**, an American missionary; born in West Springfield, Mass., March 12, 1805; was educated at Amherst and Andover. In 1833 he went to Persia as a missionary, and was active in establishing schools in that country. His works include: "Missionary Life in Persia" (1861).

He died in Chicopee, Mass., Dec. 31, 1869.

**Perkins, William Oscar**, an American composer; born in Stockbridge, Vt., May 23, 1831; was educated at Harvard University, and in 1879 took the degree of Mus. D., at Hamilton College, N. Y. He subsequently studied music in Boston and Europe. Mr. Perkins was well known as a conductor, organizing the Mendelssohn Vocal Quartet, the first male quartet for concert singing in the United States; conducting at Boston Music Hall, and at various musical festivals; and being a member of the governing board of the Handel and Haydn Society. He published over 60 anthems, cantatas and set pieces. Died in Boston, Mass., Jan. 13, 1902.

**Pernambuco**, a town in Brazil, former capital of the province of the same name. It consists of three parts: Recife, present capital, on a small peninsula; San Antonio, on an island; and Boa Vista, on the mainland, the three parts being connected by iron bridges. Recife is the principal seat of business. The trade is extensive. The principal exports are sugar and cotton; and the chief imports Manchester goods and hardware. Pernambuco was founded by the Portuguese in the 16th century. From 1630 to 1654 it was in the hands of the Dutch, under whom it prospered greatly. Pop. (1926 Est.) 2,617,310.

**Peronne**, a town of N. France, on the Somme river, 35 miles N. E. of Amiens by rail. It has had a very troubled existence. In 1536 it was besieged unsuccessfully by Charles V.; in 1870-1 it was bombarded for twelve days by the Germans, and forced by starvation and smallpox to succumb. It contains a statue of Marie Fourre, a conspicuous defender in 1536. Pop. about 5,000.

**Perpetual Motion**. A machine which, according to the hopes of its inventors, after it has been once set in motion, will keep in motion without drawing on any external source of energy. Such a machine would entirely controvert the established principle of the conservation of energy.

**Perrin, Bernadotte**, an American educator; born in Goshen, Conn., Sept.



## Perrot

15, 1847; was graduated at Yale College in 1869; studied at Leipzig and Berlin Universities in 1876-1879; and was Professor of Greek in Western Reserve University in 1881-1893, and was then appointed to the chair of Greek at Yale University. He has edited many text-books on classical subjects.

**Perrot, Georges**, a French archaeologist; born in Villeneuve-Saint-Georges, France, Nov. 12, 1832. He became Professor of Archaeology in the Faculty of Letters (1877), and director of the Upper Normal School (1883). During his archaeological investigations in Asia Minor, he made the first complete copy of the celebrated inscription on the monument of Augustus at Ancyra. He enjoys a wide reputation as co-author, with the architect C. Chipiez, of a "History of Art in Antiquity," in five volumes, treating of art in Egypt, Chaldaea, Asia Minor, etc. They have been translated into English. D. in 1914.

**Perry, Bliss**, an American educator and editor; born in Williamstown, Mass., Nov. 25, 1860. He was Professor of Oratory and Aesthetic Criticism at Princeton University, resigning to become editor of the "Atlantic Monthly."

**Perry, Nora**, an American author; born in Dudley, Mass., in 1832. For many years she was a correspondent of the Chicago "Tribune" and the Providence "Journal." Early in her career she gained a reputation as a poet, but was more widely known as a writer of stories for girls. She died May 13, 1896.

**Perry, Oliver Hazard**, an American naval officer; born in South Kingston, R. I., Aug. 23, 1785; famous for his defeat of a British force on Lake Erie in 1813. Perry, who had nine vessels, with 54 guns and 492 officers and men, fought six vessels, with 63 guns and 502 officers and men, lost four-fifths of the crew of his flagship, and finally won a complete victory, which he announced in the brief dispatch: "We have met the enemy, and they are ours—two ships, two brigs, one schooner, and one sloop." Perry died of yellow fever in Trinidad, Aug. 23, 1819, and was buried at Newport, R. I., where there is a bronze statue to his memory.

## Persia

**Perry, Thomas Sargeant**, an American author; born in Newport, R. I., in 1845; was graduated at Harvard in 1866; tutor in German there, 1868-1872; and instructor in English, 1877-1881. He spent many years abroad, and was a frequent contributor to magazines.

**Perry, William Stevens**, an American clergyman and historian; born in Providence, R. I., Jan. 22, 1832. He became Protestant Episcopal bishop of Iowa in 1876. Among the best known of his numerous books are: "Documentary History of the Protestant Episcopal Church"; "History of the American Episcopal Church"; "Life Lessons from the Book of Proverbs." He died May 13, 1898.

**Perseus**, or **Persus**, the last king of Macedonia, son of Philip V. He came to the throne on the death of Philip, 178 B. C. The great event of his reign was the war with the Romans, which, long expected, began in 171 and ended in 178, by the total defeat of Perseus at Pydna, by L. Aemilius Paulus.

**Pershing, John Joseph**, an American military officer; born in Linn Co., Mo., Sept. 13, 1860; was graduated at the U. S. Military Academy in 1886; promoted to Brigadier-General Sept. 20, 1906; served in the Apache Indian campaign in 1886, in the Sioux campaign in 1890-1, in the Santiago campaign in 1898, in the Philippines in 1899-1903 and 1906-13, and as commander of the troops in Mexico in 1916; promoted to Major-General Sept. 26, 1916; commander-in-chief in France, 1917; commanded 1917. Thanks of Congress, 1919.

**Persia** (Persian Iran), an extensive country of Asia, bounded on the N. by the Caspian Sea, the Transcaspian and Transcaucasian provinces of Russia; S. by Persian Gulf and Indian Ocean; E. by Russian territory, Afghanistan and Baluchistan, and W. by Asiatic Turkey. Its length obliquely from N. W. to S. E. is 1,500 miles; area, about 623,000 square miles. On the N. W. and S., several lofty mountain ranges—some of considerable length, others short and abrupt—intersect the land in many directions, in the center of the country consisting in general of a vast plain or table-land. The provinces, however, along the S.



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GENERAL JOHN JOSEPH PERSHING (1860)

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### MONGOLIAN

- |                  |            |
|------------------|------------|
| 1 Tuncuse Woman  | 2 Kirghis  |
| 3 Chinese Woman  | 4 Korean   |
| 5 Japanese Woman | 6 Tchukchi |

### CAUCASIAN

- |            |                  |                     |
|------------|------------------|---------------------|
| 7 Cossack  | 8 Georgian Woman | 9 Cashmerian        |
| 10 Persian | 11 Arab          | 12 Swede            |
|            | 13 Scotchman     | 14 Italian (Sicily) |

### MAI

- |                     |
|---------------------|
| 15 Diak Woman       |
| 17 Andaman Is.ander |
| 19 Fijian           |



# MANKIND



## ASIAN

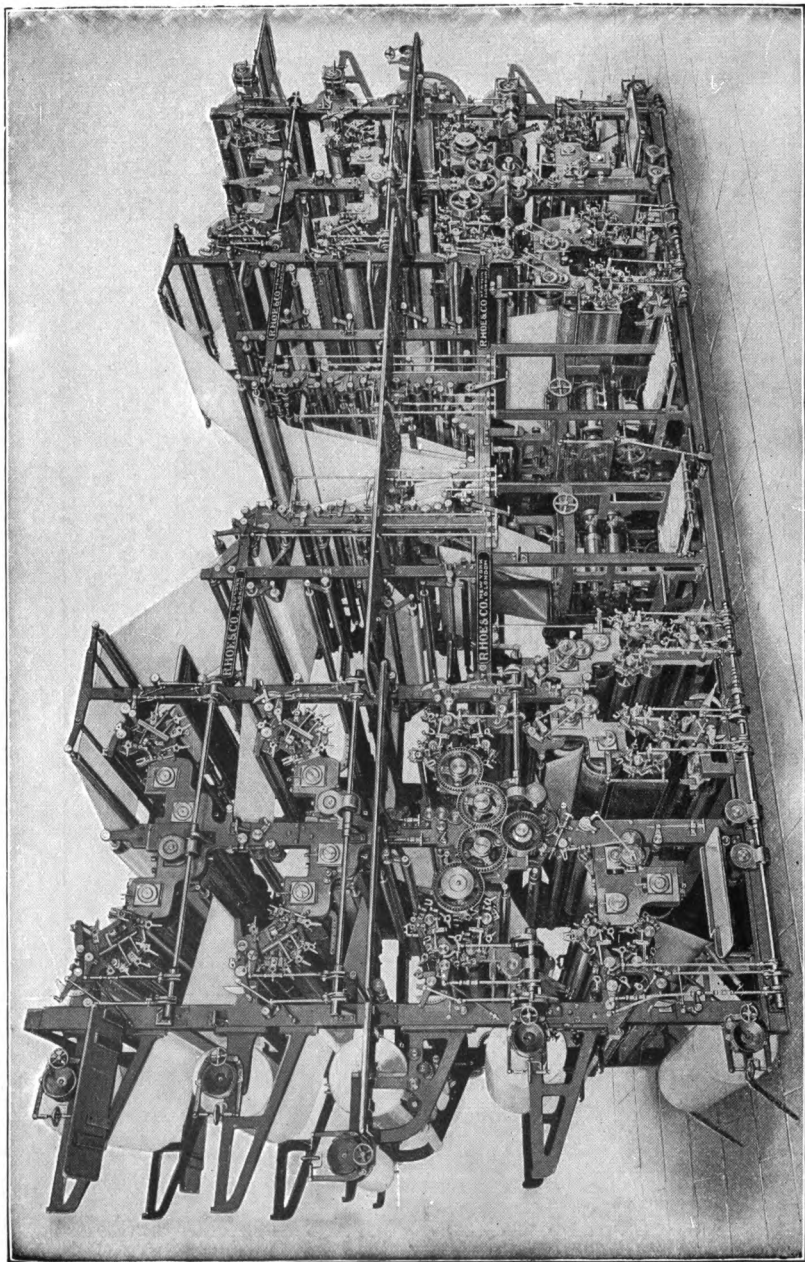
- 16 Malay Woman
- 18 Samoan Woman
- 20 Maori

## AMERICAN

- 21 Eskimo (Labrador)
- 23 Apache (No. Amer.)
- 25 Bororo (Brazil)
- 22 Sioux (No. Amer.)
- 24 Mexican Squaw
- 26 Araucanian (Chile)

## ETHIOPIAN

- 28 Massai
- 31 Abyssinian
- 29 Zulu
- 32 Nubian
- 30 Loango
- 33 Eushman



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and W. margin of the Caspian are an exception to the rest of the country, and present some of the most beautiful and fruitful pictures of richness and abundance to be found in Persia. It has been computed that barely a third of the entire kingdom is fit for cultivation.

The vegetable productions of Persia embrace all kinds of legumes and cereals, except rye, oats, and rice; barley and wheat are the most abundant crops. Drugs of various kinds are obtained, such as senna, rhubarb, gums, opium, etc.; as also oils, cotton, indigo, sugar, madder, dates, pistachio nuts, and tobacco; while in flowers, and the perfumes extracted from them, especially the attar of roses, no country in the world can compare with Persia for beauty, fragrance, and abundance. Silk is an important item; and plantations of mulberry trees of great extent are very numerous. Vast flocks of sheep and goats are pastured over the country, the property and wealth of the wandering tribes of the interior, the Eelauts, a kind of Bedouins, devoting themselves to pastoral habits. The animals for which Persia is famous, are camels, horses, mules, oxen, asses, and buffaloes. The mineral wealth consists of silver, copper, lead, iron, antimony, salt, precious stones—especially turquoise—bitumen, and springs of naphtha. There are also large, undeveloped fields of coal and petroleum. One of the features of Persia is the abundance of salt in the soil, and the large number of its salt lakes; about 30 pure salinas have no outlet; and one, the largest, Uremiyah, is 280 miles in circumference, and, though supplied by 14 rivers, its water is so dense, bitter, and loaded with salt, that no fish can live in it. The climate of Persia embraces the rigors experienced on the mountains of the snowy N., and the heats felt on the sandy plains of Africa. Cyrus the Younger told Xenophon that his father's empire was so vast that in the N. the people perished of cold, and in the S. were suffocated with heat.

The manufactures of Persia are numerous and important, and embrace all kinds of silk fabrics, satins, taffetas, textures of silk and cotton, silk and goat's hair, or silk and camel's hair; brocades, camel's hair shawls, gold tissues, gold velvet, eamlets, carpets, cot-

tons, leather, firearms, sword blades, saddlery, and jewelry. Its principal trade is carried on with Russia; and, though the foreign export trade is insignificant, the internal traffic is very great and is entirely carried on by caravans.

The government is highly despotic; an edict of the sovereign once passed, can never be repealed, the word of the Shah is irrevocable, and the lives and property of the people are in his hands. The government is carried on by the Shah and his two principal ministers, the Grand Vizier and the Lord Treasurer. The religion of the Persians is Mohammedanism. In physical appearance the Persians are inclined to corpulence, have black hair, a high forehead, an aquiline nose, and a largely developed chin; and in color present every variety, from the dark brown of the Indian to the light olive of the colder regions. The men are strong, robust, fond of exercise and martial glory, shave their heads, but dye their beards black, preserving them with an almost religious veneration. The Persians are regarded as a gay and hospitable race, but prone to sudden anger and treachery.

The Persian language is the most celebrated of all the Oriental tongues, for strength, copiousness, beauty, and melody, and is written from the right to the left. The earliest account we possess of Persia is from the Bible, from which we learn that, in the time of Abraham, 1921 B. C., that portion of modern Persia known as Elam, or Suisiana, Southern Persia, was a powerful monarchy. But the Persians, as a nation, first rose into notice on the ruins of the great empires founded on the Euphrates. Babylon was taken by Cyrus, and his empire extended wider than any before established in the world. After a feeble struggle, it succumbed to the brave and disciplined armies of Alexander. It was then split into fragments by the decease of its founder; but Greeks and Greek sovereigns continued, during several centuries, to reign over Asia. About two centuries before Christ, Arsaces founded the monarchy of the Parthians; and in the 3d century arose the dynasty of the Sassanids, who restored the name, with the religion and laws, of ancient Persia. They were overthrown by the Mohammedan invaders,

who suffered in their turn from the successive invasions by the descendants of Genghis, Timur, and by the Turks, who entirely changed the aspect of Western Asia. At length, in 1501, a native dynasty again arose, under Ismail, who placed himself on the throne. His posterity having sunk into voluptuousness, Persia, in the beginning of the 18th century, was overrun by the Afghans, who carried fire and sword through its remotest extremities, and reduced its proudest capitals to ashes. The atrocities of the Afghans were avenged, and the independence of Persia vindicated by Nadir Shah, but though the victories of this daring chief threw a luster on his country, after his death it was almost torn to pieces by civil war, till the fortune of arms gave a decided superiority to Kereim, or Kurreem Khan. His death gave rise to another disputed succession, with civil wars as furious as before. At length, Aga Mahommed, a eunuch, raised himself, by crimes and daring, to the sovereignty, and not only swayed it during his lifetime, but founded a dynasty since represented by Nasr-ed-Din from 1848, Muzzafared-Din from 1896, Mohammed-Ali-Mirza from 1907, his son Hussein-Ali-Mirza from 1909, infant son of Ahmed Mirza from March, 1924.

Persia, with Armenia and Mesopotamia, suffered severely in the World War. While a British force was fighting under adverse conditions in Mesopotamia, a Russian army struck the Turks in the mountainous region of Armenia. On Jan. 17, 1916, the Turkish center at Kopri-Keui was broken; on Feb. 16, the stronghold of Erzerum was taken; on April 17 Trebizond capitulated; and on July 25 the fall of Erzingan completed the recovery of all Armenia from the Turks. British and Russian armies penetrated Persia, and had several spirited encounters with the Turks with varying results. See APPENDIX: *World War*.

**Persian Gulf**, an arm of the Indian Ocean which penetrates between Arabia and Persia to the extent of 650 miles in a general N. W. direction. Its breadth varies from 55 miles at the mouth to 250 miles, and the area is estimated at 77,450 square miles, not including its islands.

**Perspective**, the science of representing appearances, and as such opposed to geometry, which is the science of representing facts. It is founded upon such rules as can be deduced from the facts which are discovered by looking at objects through a sheet of glass or other transparent medium placed upright between the object and the observer. It is found when objects are so looked at that their apparent form is very different from their real one, both as regards shape and distinctness. The portion of the subject which deals with the changes in form is absolutely scientific; it is called linear perspective. The changes in distinctness are effected by distance and atmosphere, and differ constantly with different conditions of light and atmosphere. It is the purely artistic side of the science which is called aerial perspective, and success in its application depends on the individual ability of the artist.

**Perspiration**, watery matter, "breathed out," or made to expire from the system by means of the pores in the skin. It is more copious than the matter sent forth from the lungs by respiration, averaging 11 grains per minute against 7 from the lungs.

**Perth Amboy**, a city and port of entry in Middlesex county, N. J.; on the Raritan river and several railroads; 21 miles S. W. of New York city; settled in 1680; in colonial days, the seat of government of New Jersey; has a good harbor, valuable deposits of fire-clay and kaolin, large shipping trade in farm products and manufactures, and copper, lead, brick, terra cotta, emery, and chemical plants. Pop. (1930) 43,516.

**Peru**, a maritime republic of South America, bounded on the N. by Ecuador, on the W. by the Pacific, on the S. and S. E. by Bolivia and Chile, and on the E. by Brazil; area, 722,461 square miles; pop. (1924 Est.) 4,620,000; capital, Lima.

The country is 1,100 miles in length, 780 miles in extreme width along the N. boundary, but it is little more than 50 miles wide in the extreme S. The islands along the coast while few in number, are exceedingly valuable in that they are rich in guano, vast quantities having been exported.

The surface of Peru is divided into

three distinct and well defined tracts or belts, the climates of which are of every variety, from torrid heat to Arctic cold, and the productions of which range from the stunted herbage of the high mountain slopes to the oranges and citrons, the sugar canes and cottons of the luxuriant tropical valleys. These three regions are the Coast, the Sierra, and the Montana. The Sierra embraces all the mountainous region between the W. base of the maritime Cordillera and the E. base of the Andes, or the East Cordillera. Here the valleys enjoy an Indian climate, and are rich in tropical productions; to the N. and E. extend luxuriant forests while the numberless mountain slopes are covered with waving crops of wheat, barley, and other cereals, and with potatoes; and higher up extend rich pasture lands, where huge herds of vicunas and pacas feed. The valley of the river Marañon, which is upward of 300 miles in length, is narrow, deep, and nearer the equator than any other valley of the Sierra, and consequently it is the hottest portion of this region, and its vegetation is thoroughly tropical in character. The conformation of the surface of the Sierra is of the most wonderful description.

After the table-lands of Tibet, those of the Peruvian Andes are the highest in the world; but, unlike those of Tibet, the tablelands of Peru are the seat of a comparatively high civilization, and are studded over with towns and villages, perched on heights exceeding in elevation the summits of the Jungfrau and the Matterhorn. Nor are such towns the mere eyries of miners who are tempted to ascend thus high in search of the precious metals; for, even at this elevation, the climate is pleasant, and wheat, maize, barley, rye, and potatoes thrive well. The climate of the Sierra, however, is not always so delightful. In general terms it may be described as mild and variable, with moderate rains. In the district of Paucartambo rain falls 300 days in the year. A country, however, of such an uneven surface, of snow-covered peaks and tropical valleys, embraces every variety of climate.

The gold standard is now permanently established in Peru. The nation has entered upon a new period of industrial activity. Numerous com-

panies have been formed to explore the Amazonian region; new roads are being opened in every direction. There is marked confidence in the stability of order, and under the protection of peace old financial institutions and industrial and mining enterprises are thriving and public wealth is rapidly increasing.

The whole of Easter Peru may be said to be undeveloped, largely because of constant internal disputations which are not conducive to the attraction of the necessary capital. There are no industries except rubber, ivory nuts, dyewoods, and similar forest products. Mining is the great industry in the mountain area and on the pacific slope of the mountains. The principal metal now mined is copper, often mixed with silver. Lead and gold are also mined in considerable quantities. Bismuth, vanadium, wolframite and the non-metals, salt and borate of lime, are important industries. Oil wells are in operation in Northern Peru on the sea coast. The production of coal has increased greatly in recent years, having now an annual value of \$862,508. The total value of all mineral products averages about \$100,000,000 yearly.

In the coast region agriculture is developed to a high degree. The principal exports are cotton, sugar, rice, cacao, and fresh fruits. The sheep and alpaca industry has become very important in the uplands, export of wool amounting to \$3,357,708 yearly, over 60 per cent of which is alpaca wool. Sugar is exported to the amount of \$6,762,637 and cotton to the amount of \$27,050,548 yearly.

The wealth and resources of Peru consist not in its manufactures, but entirely in mineral, vegetable, and animal products. Of the precious metals, the production has greatly fallen off since Peru became an independent State. Nevertheless, Peru possesses vast metallic riches. The Andes abound in mines of gold, silver, copper, lead, bismuth, etc.; and in the Montana gold is said to exist in abundance in veins and in pools on the margins of rivers. The vegetable productions of Peru are of every variety, embracing the products both of temperate and tropical climates. North American cereals and vegetables are

grown with perfect success, together with maize, rice, pumpkins, tobacco, coffee, sugar cane, cotton, etc. Fruits of the most delicious flavor are grown in endless variety. Cotton, for which the soil and climate of Peru are admirably adapted, is now produced here in gradually increasing quantity. The land suited to the cultivation of this plant is excellent. The animals comprise those of North America, together with the llama and its allied species.

The republic of Peru, formerly the most important of the Spanish viceroyalties in South America, issued its declaration of independence July 28, 1821; but it was not till after a war, protracted till 1824, that the country gained its actual freedom from Spanish rule. The republic is politically divided into departments, and the departments into provinces. The present constitution, proclaimed Oct. 16, 1856, was revised Nov. 25, 1860. It is modeled on that of the United States, the legislative power being vested in a Senate and a House of Representatives, the former composed of deputies of the provinces, in proportion of one for every 30,000 inhabitants or fraction exceeding 15,000, and the latter of representatives nominated by the electoral colleges of the provinces of each department, at the rate of two when the department has two provinces and one more for every other two provinces. The executive power is entrusted to a president. There are two vice-presidents, who take the place of the president only in case of his death or incapacity, and they are elected for four years. The president has to exercise his executive functions through a cabinet of five ministers, holding office at his pleasure. None of the president's acts have any value without the signature of a minister.

By the terms of the constitution there exists absolute political, but not religious, freedom, the charter prohibiting the public exercise of any other religion than the Roman Catholic, which is declared the religion of the State. But practically there is a certain amount of tolerance, there being in Callao and Lima Anglican churches as well as Jewish synagogues. Elementary education is compulsory for both sexes, and is free in the public schools that are maintained by

the municipalities. High schools are maintained by the government in the capitals of the departments, and in some provinces pupils pay a moderate fee. There is in Lima a central university, called "Universidad de San Marcos," the most ancient in America; its charter was granted by the Emperor Carlos V.; it has faculties of jurisprudence, medicine, political science, theology, and applied science.

Peru, the origin of whose name is unknown, is now passing through its third historical era, and is manifesting its third phase of civilization. The present era may be said to date from the conquest of the country by the Spaniards in the early part of the 16th century; the middle era embraces the rule of the Incas; and the earliest era, about which exceedingly little is known, is that of pre-Incarial period of unknown duration, during which a nation flourished in the country, and had a distinct language and religion.

The revenue of the Republic in 1928 was estimated at \$42,811,720; the expenditure, \$45,468,364; the total debt, \$102,309,228; the imports (1922) \$51,474,610, and exports, \$90,847,614.

**Perugino, Pietro**, an Italian painter; born in Leitta Della Pieve, about 1446. His real name was Pietro Vannucci, but becoming a citizen of Perugia, he acquired the name by which he is best known. He studied under Verrocchio, and soon attained great distinction as a painter in oil by his rich coloring. He was employed for 10 years in the Sistine Chapel and the Stanze of the Vatican, and on his return to Perugia opened a school, and had Raphael among his pupils. Perugino was a sordid and eccentric man; adhered obstinately to the stiff conventional forms of the 15th century, and in his latter years produced many works, unworthy of him, for gain. His best work is the "Pieta," in the Pitti Palace. He died in 1524.

**Peruvian Balsam**, in botany and commerce, the balsam flowing from incisions in the trunk of *Myroxylon pereiræ*. It is a thick, viscid, almost opaque, balsam, like molasses, with a reddish hue, and translucent, when in thin layers; its odor fragrant, its taste acrid, but aromatic. It is brought from San Salvador, in South America.

**Peruvian Bark.** See BARK PERUVIAN.

**Peruzzi, Baldassari,** architect and painter of the Roman school; born at Sienna, 1481; died at Rome 1537. He went early to Rome and was employed in the decoration of various churches. He designed the Farnesina Villa on the banks of the Tiber, and he succeeded Raphael as architect of St. Peter's. After the sack of Rome he returned to Sienna, where he was made city architect. In 1535 he was again in Rome, and henceforward devoted himself entirely to architecture. His best existing works in fresco are at Sienna.

**Pesaro** (ancient, Pisaurum), a fortified town and seaport of Italy, province of Pesaro e Urbino, near the mouth of the Foglia, in the Adriatic. It is the see of a bishop. The harbor, formed by the mouth of the Foglia, has become shallow; but the trade in the wine, fruit (particularly figs), oil, silk, and other products of the district is considerable. The illustrious composer Rossini was born here in 1792. Pop. (1926 Est.) 33,032. The province of Pesaro e Urbino has an area of 1,118 square miles; pop. 280,000.

**Pescherais,** a tribe of Indians, inhabiting Tierra del Fuego, and both borders of the Straits of Magellan, from the island of Elizabeth and Port Famine, toward the E. as far as the group of islands which spread out to the N. and S. of the Straits of Magellan. Their complexion is olive, and they have huge forms and large chests, though otherwise well formed. They are a nomadic people, and only subsist by the chase and fishing.

**Peschito, or Peshito,** the old Syriac version of the Scriptures, made probably about 200 A. D. The Old Testament, as well as the New, seems to have been translated by one or more Christians, not by Jews. The former was made apparently from the Hebrew, the latter from the Greek. The Second and Third Epistles of John, Second Epistle of Peter, Jude, and the Revelation are wanting. The apocryphal books were not in the original edition, but they were added at an early date. The Peschito is of great value for critical purposes.

**Peseta,** the Spanish money unit, equivalent to a franc.

**Peso,** a silver coin and money of account used in Mexico and other parts of Spanish America, and often considered equivalent to a dollar.

**Pessimism,** that mental attitude which induces one to give preponderating importance to the evils and sorrows of existence; the habit of taking a gloomy view of things.

**Pestalozzi, Johann Heinrich,** a Swiss philanthropist and educational reformer; born in 1746; first studied theology, then law; and subsequently became concerned in a calico manufactory. Afterward he devoted his time and substance to training children whom he collected in large numbers in his own house, and this good work he carried on for over 20 years without outside aid or even sympathy. The want of means at last compelled him to abandon his gratuitous institution, and to seek pupils who could pay for their maintenance and instruction. After a few years' successful teaching in various places he opened a school in the Castle of Yverdun (canton Vaud), which the government had placed at his disposal. His novel "Lienhardt and Gertrud" exerted a powerful moral influence, while his educational treatises have laid the foundation for the more rational system of elementary instruction which now obtains in America and Europe. He died in 1827.

**Peter,** the Greek surname of an apostle of Jesus. It is the rendering of the East Aramaean *kepha*, a corruption or derivation from Heb. *keph* = a rock, and was given by Jesus. Transliterated into Greek, with a termination, it became *Kephas*. Peter's real name was Simon, his father's Jonas, his brother's Andrew. Peter was of an impulsive temperament, generous, but too forward in speech, and rash in action. After the Ascension, he was for a time the most prominent of the apostles, and though specially sent to the Jews, yet had the privilege of being the first to admit Gentiles into the Church. Afterward he was somewhat cast into the shade by the eminence of St. Paul and on one occasion dissembling his liberal views when in narrow Judaic company, was



withstood by St. Paul to the face "because he was to be blamed" (Gal. ii: 11). Tradition makes him die as a martyr at Rome, about A. D. 64, crucified with his head downward. Roman Catholics claim him as the first Bishop of Rome, and consider that the authority delegated him by Jesus appertains also to his successors, the Popes of Rome.

The First Epistle General of Peter, an epistle which claims to have been written by the Apostle Peter, apparently from Babylon, "to the strangers scattered throughout Pontus, Galatia, Cappadocia, Asia, and Bithynia," all places in Asia Minor. These strangers were obviously Christian converts, the majority apparently Gentiles. There is strong evidence for its authenticity, which has rarely been doubted.

The Second Epistle of Peter, another epistle claiming to have been penned by the Apostle, the author also referring to the transfiguration scene as one which he personally witnessed, and to a previous epistle. In this second letter he seeks to establish Christians in the faith, warns them against false teachers, and predicts the general conflagration of the world. Its style is different from that of the first. The evidence for its authenticity is much less strong than that for the first epistle. Clement of Alexandria seems to have known it. It is not in the Peschito; Cyprian ignored it; Origen and Eusebius placed it among the controverted writings, but it gradually obtained acceptance before the close of the 4th century.

**Peter Alexeievitch**, usually styled Peter the Great, Czar of Russia; born in 1672; and in 1689 he obtained the sole authority, on the retirement of his brother Ivan, with whom he had been before associated in the government of the empire. After having suppressed a conspiracy of the Strelitz against his life, in which he displayed much personal courage, he traveled in foreign countries, not in the character of czar, but as a member of an embassy. At Amsterdam he worked, incognito, in a shipyard, and in the village of Saardam, where he caused himself to be enrolled among the workmen, under the name of Peter Michaeloff. Here he lived in

a little hut for seven weeks, made his own bed, and prepared his own food, corresponded with his ministers at home, and labored at the same time in shipbuilding. Induced by his love for the sea, to accept the invitation of William III. to visit London, he spent some weeks there, keenly observing and learning all that he could of trade, manufactures and the arts. Having proceeded to Vienna, he there received intelligence of a new rebellion of the Strelitz, on which he returned home, crushed the insurrection, and visited the rebels with fearful severity. In 1700 he entered upon a war with Sweden, which lasted till 1721. He was defeated by his great rival, Charles XII., at the battle of Narva, and the war went on with various results till 1709, when he completely defeated Charles at Pultowa. In the following year the Sultan declared war on him, and he narrowly escaped capture by the Turks in the campaign of 1711. This war ended in 1713. Not satisfied with his immense power as czar, Peter had suppressed the patriarchate, and made himself head of the Church as well as of the State. In 1703 he founded St. Petersburg, and began the fortifications of Cronstadt. Three years later he privately married Catherine, a girl of low origin and immoral character; married her publicly in 1710, and had her crowned in 1722. Peter extended the limits of the empire both in Europe and Asia; changed the face of Russia by his zealous promotion of trade, navigation, manufactures, and education; effected an immense change in the manners and customs of the Russians; and after the conclusion of peace with Sweden, received the title of Emperor of all the Russias, and Father of his Country. Reforming others, he failed to reform himself, but remained to the last an ignorant, coarse, brutal savage, indulging in the lowest vices, and gloating over scenes of cruel suffering. He would sometimes put his victims to the torture, play judge and executioner, too, and, drunk with wine, strike off 20 heads in succession, proud of his horrid dexterity. His state policy has been adhered to by his successors. Peter I. died in St. Petersburg, after very severe suffering, Jan. 28, 1725.

**Peter III.**, Emperor of Russia; the son of Anne, eldest daughter of Peter the Great; born in 1728, and succeeded Elizabeth in 1761. He married the Princess Sophia Augusta of Anhalt, whose name he changed to Catherine, and, being inspired with grand and martial thoughts, attempted to govern his empire on the model of Frederick the Great; but, wanting capacity, energy, and courage, he signally failed in all his schemes. His empress, being apprised of his intention of divorcing her, anticipated his design, took him prisoner, and compelled him to sign an abdication. After this, being sent to a fortress, he there perished, being murdered, it is understood, by Orloff in 1762.

**Peterboro**, city and capital of Peterboro county, Ontario, Canada; on the Otonabee river and Grand Trunk and Canadian Pacific railroads; 76 miles N. E. of Toronto; is the trade center of an important farming section; has what is said to be the largest hydraulic lift canal lock in the world; and is chiefly engaged in manufacturing. Pop. 23,000.

**Peter Karageorgevitch I.**, King of Servia; born in Belgrade, June 29 (O. S.), 1844; son of Alexander Karageorgevitch and grandson of the famous George Czerny, surnamed Karageorge, or Black George; married Princess Zorka, of Montenegro, July 30 (O. S.), 1883; succeeded to the throne on the assassination of King Alexander I and Queen Draga, June 2 (O. S.), 1903; heir to the throne, Prince Alexander. Died, 1921. His son Alexander became in 1918 first King of the Serbs, Croats and Slovenes (Jugo Slavia); married, 1922, daughter of King of Rumania. Heir, Prince Peter; born, 1923. See APPENDIX: *World War*.

**Peters, Samuel Andrew**, an American author; born in Hebron, Conn., in 1735; was ordained a minister in the Church of England at Hartford in 1760. In 1774 he sailed to England to escape persecution on account of his torism, and in 1781 published the satirical "General History of Connecticut," which gave rise to the misconception as to "Blue Laws," which were in the brain of Peters instead of having ever been

on the statute books of Connecticut. He died in New York in 1826.

**Petersburg**, a city and port of entry of Dinwiddie co., Va.; on the S. bank of the Appomattox river. The so-called siege of Petersburg lasted from June 16, 1864, to April 2, 1865; and during its continuance 13 pitched battles were fought in the neighborhood. The intrenchments of Lee and Grant still form conspicuous features in the landscape. One of the best-known engagements was that of the old crater, to the E. of the city, on Griffith's farm, where there is a war museum. Pop. (1930) 28,564.

**Peterson, Charles Jacobs**, an American publisher; born in Philadelphia, in 1818; was the founder of "Peterson's Magazine," and the author of several popular novels. He died in Philadelphia, in 1887.

**Peter's Pence**, a voluntary contribution raised among Catholics, and sent to the Pope for his private use. Before the Reformation it was in England a legally collected tax. The name arose from its being collected on St. Peter's day.

**Peter the Hermit**, a French gentleman of Amiens, in Picardy, who renounced a military life to embrace that of a pilgrim. At the end of the 11th century, a general alarm was spread that the last day was approaching; on which numbers of persons flocked to the Holy Land from all countries with a view of ending their days near the holy sepulcher. Peter was of the number, and on his return to Europe made so pathetic a representation of the state of the Christians in Palestine to Pope Urban II., that he gave Peter leave to preach up the necessity of a crusade throughout Christendom. The appearance, zeal, and eloquence of the hermit, produced a prodigious effect, and all ranks and ages, of both sexes, pressed eagerly into the service. With a motley army, estimated at 100,000 men, Peter passed through Hungary. In his absence, his followers attacked Solymán's army at Nicea, and all, except a few thousands, perished, "and," says Gibbon, "a pyramid of bones informed their companions of the place of their defeat." Peter remained in Palestine, and was at the siege of Antioch in

1097; but on his attempting to make his escape, shortly afterward, was brought back, and compelled to take a new oath of fidelity and obedience to the holy cause. Two years later he was present at the siege of Jerusalem, where he displayed great bravery, and when the place was taken, was made vicar-general. Peter died in 1115, at the abbey of Neufmoustier in Liege, which he had founded.

**Peter Parley.** See GOODRICH.

**Petit de Julleville, Louis,** a French historian; born in Paris, July 18, 1841. His principal work is "History of the Theater in France." It is very full with regard to the old French theater. He gives in "The Theater in France" (1889) an account of the evolution of the French drama down to the present time. He also published a "History of the French Language and Literature." D. in 1900.

**Petition of Right,** a declaration of the rights of the people put forward by the Parliament of England in the third year of the reign of Charles I., and assented to by him. They are: (1) That no man be compelled to pay any moneys to the state without common consent by act of Parliament. (2) That no person be imprisoned for refusing the same, nor any freeman be imprisoned without any cause shown, to which he might make answer. (3) That soldiers and mariners be not billeted in the houses of the people. (4) That commissions be no more issued for punishing by the summary process of martial law.

**Petrarch, Francesco Petrarca,** an Italian poet; born in Arezzo, Italy, in 1304. In 1341 Petrarch received the highest testimony of the renown which he had acquired as poet and scholar, by being crowned as laureate in the Capitol in Rome. Petrarch was at Rome during the Jubilee of 1350; lived afterward at Vacluse, Milan, Padua, Venice, and, in 1370, removed to Arqua, in the lovely Euganean Hills. Petrarch's works are partly in Italian and partly in Latin. The latter were those on which his reputation in his own day rested; but the former are those by which he is now most known. His Italian "Sonnets," "Canzoni," and "Triumphs," all sweet, exquisite, glowing variations on one theme, "Laura," have placed him

as one of the most celebrated of poets. He modelled the Italian sonnet, and gave to it, and to other forms of lyrical poetry, not only an admirable polish of diction and melody, but a delicacy of poetic feeling which has hardly ever been equaled. After long continued ill health, he died sitting among his books, July 18, 1374.

**Petrel,** a popular name for certain small oceanic birds of dusky plumage, nocturnal in habit, widely distributed but most abundant in the Southern



STORMY PETREL.

Hemisphere. The term stormy petrel is more exclusively applied to the *Thalassidroma pelagica*, a bird which seems to run in a remarkable manner along the surface of the sea, where it picks up its food. This species is well known to sailors as Mother Carey's chickens (q. v.), and their appearance is supposed to foretell a storm.

**Petri, Laurentius,** a Swedish reformer; born in Orebro, Sweden, in 1499; studied under Luther at Wittenberg; was made Professor of Theology at Upsala, and in 1531 first Protestant Archbishop of Upsala. Along with his brother Olaus he was chiefly instrumental in converting Sweden to the Reformed doctrines, and with him superintended the translation of the Bible into Swedish (1541), a work that also helped to fix the language. He died in 1573. His brother Olaus,

born in Orebro in 1497, gained, a few years after his return (1519) from Wittenberg, the ear of Gustavus Vasa, who called him to the capital to preach the new doctrines, and eventually made him (1531) chancellor of the kingdom. This post he resigned in 1539, and spent the rest of his life as first pastor of Stockholm. He was a man of bold temperament, great activity, and powerful eloquence, and left several works, including memoirs, a mystery play, hymns, and controversial tracts. He died in Stockholm in 1552.

**Petrifaction**, the act or process of petrifying or changing into a stone; the state of being petrified; conversion of any organic matter, animal or vegetable, into stone, or a substance of stony hardness. A "petrification" is not, strictly speaking, a transformation of the original animal or plant into stone. It is merely a replacement of the organic tissue by mineral substance. As each particle of the plant or animal decays its place is taken by a particle of mineral matter deposited from the water which has held it in suspension. Thus the perishable original is changed into imperishable stone, preserving its form and even its structural appearance when cut into.

**Petrograd** (the city of Peter), the new name given to St. Petersburg, Russia, by imperial decree on Sept. 1, 1914, remained Capital of Russia until March 14, 1918, when it was moved to Moscow. On Jan. 24, 1924, the name was changed to Leningrad. Pop. said to have fallen from 1,900,000 to 600,000 since revolution of 1917. (See St. Petersburg).

**Petroleum**, earth oil, naphtha, mineral oil, paraffin oil. A term applied to a variety of inflammable liquids found naturally in many parts of the earth and formed by the gradual decomposition of vegetable matter beneath the surface. These liquids vary in color from a faint yellow to a brownish-black, and in consistence from a thin transparent oil to a fluid as thick as treacle, and their sp. gr. ranges from .7-1.1. They occur in abundance in parts of the United States and Canada. A light petroleum oil is used all over the world for illuminating purposes, and a heavy oil for lubricating machinery.

The output of crude petroleum in 1925 was 764,000,000 barrels (42 gallons). California led with a total output of 230,148,000 barrels for that year. Next to the United States in world production was Mexico with 115,000,000 barrels. The United States produced about seventy per cent of the total output of the world in 1925.

**Petrology**, the study of the mineralogical and chemical composition of rocks; including the various changes they have undergone.

**Pettenkofer, Max von**, a German chemist; born near Neuburg, Dec. 3, 1818; studied in Munich, Wurzburg, and Giessen, and in 1847 became Professor of Chemistry at Munich. He made many valuable contributions to science on subjects as various as gold-refining, gas-making, ventilation, clothing, the influence of soils on health, epidemics, and hygiene generally. His "Hand-book of Hygiene" is his best known work. Died 1901.

**Petty, Sir William**, an English political economist; born in Romsey, Hampshire, May 26, 1623; was educated partly at Caen, partly at the Universities of the Netherlands, and at Paris. In political economy he claims a place as one of the most important precursors of Adam Smith, on the strength of his "Treatise on Taxes and Contributions," and his "Political Arithmetic," the latter a discussion of the value of comparative statistics. He died in London, Dec. 16, 1687.

**Petunia**, a genus of American herbaceous plants, nearly allied to tobacco. They are much prized by horticulturists for the beauty of their flowers.

**Pewter**. The finer pewter is an alloy of 12 parts tin, one part antimony, and a small quantity of copper; the coarser, of 80 parts tin and 20 of lead. The same ingredients as the finer pewter, but in different proportions (nine of tin to one of antimony) constitute Britannia metal. Pewter is a name also for a polishing material used by marble workers and derived from the calcination of tin.

**Peyton, Jesse Enlows**, an American patriot; born in Mayesville, Ky., Nov. 10, 1815. He assisted in the liquidation of Henry Clay's debts;



was a founder of the Constitutional Union Party in 1860; was sent by President Lincoln on a mission to Kentucky to dissuade that State from seceding; and during the Civil War organized at his own expense three regiments for the Union army. He was instrumental in promoting the centennial celebration of Independence Day, Bunker Hill Day, Yorktown (Va.) Day, and of the inauguration of American constitutional government, and at the time of his death was organizing an international celebration of the birth of Christ to be held in Jerusalem in 1900. He died in Haddonfield, N. J., April 28, 1897. He was popularly known as "the father of celebrations."

**Peyton, John Lewis**, an American lawyer and author; born in Staunton, Va., Sept. 15, 1824; studied law at the University of Virginia, and subsequently practised in Chicago; in 1861 went to Europe as agent of the Confederacy, and remained abroad till 1880. He published "The American Crisis," etc. He died in 1896.

**Pfennig**, a small copper coin of various values, current in Germany and in the neighboring States. The value of the pfennig of the German republic is the hundredth part of the mark.

**Pfleiderer, Otto**, a German theologian; born in Stettin, Wurtemberg, Sept. 1, 1839. In 1875 he was called to be Professor of Systematic Theology at Berlin. He made his name as well known in America as in Germany by a series of works which no student of philosophy or theology should overlook. The chief are "Religion, its Essence and History"; "Outline of Christian Faith and Ethics"; "The Philosophy and Development of Religion"; etc. He died in 1908.

His brother, **EDMUND PFLEIDERER**, born in Stettin Oct. 12, 1842, studied at Tubingen, and after a short experience as a pastor was made Professor of Philosophy at Kiel in 1873, whence he was called to Tubingen in 1878. His writings include studies on Leibnitz, on Empiricism and Scepticism in Hume's Philosophy, modern Pessimism, etc.

**Phaeton**, in Greek mythology, according to Ovid, a son of the sun, or Phœbus. He asked and obtained from

his father permission one day to drive the chariot of the sun, but being unable to control the horses, Jupiter struck him with a thunderbolt, and hurled him headlong from heaven into the river Po. Also an open carriage like a chaise, on four wheels, and drawn by two horses.

**Phalanger**, small woolly-coated marsupials, with opposable great toes, which are destitute of a nail. They are, for the most part, vegetable feeders,



PHALANGER.

though some are insectivorous, and in confinement any of them will readily devour small birds or other animals.

**Phalanx**, in Greek antiquities, the close order of battle in which the heavy-armed troops of a Grecian army were usually drawn up.

**Phantasmagoria**, an optical effect produced by a magic lantern. The glass is painted black on all parts except that occupied by the figures, which are painted in transparent colors. The image is thrown on a transparent screen placed between the spectators and the lantern. By moving the instrument toward or from the screen, the figures are made to diminish or increase in size, which is capable of producing startling effects. Also, the apparatus by which such effect is produced.

**Pharaoh**, the name borne in the Bible by 10 kings of Egypt; the best known of which are, the monarch to whom Joseph explained his dream, and who loaded him with honors; he who commenced the persecution of the Hebrews, and who put to death all



the male children and who is identified with Rameses II; and he who was denounced by Moses, and who was subjected to the plagues and is identified with Menephtah I.

**Pharisees**, the most numerous of the three divisions or orders of Judaism in the time of Christ, the other two being the Essenes and the Sadducees. They were so called because they kept aloof from Levitically impure food, separated themselves from people who disregarded the literal interpretation of the Mosaic law, and were scrupulous in their minute observance of the tithe. The sect arose after the captivity and became the strictest of the sects.

**Pharmacy**, or **Pharmacutics**, the art of preparing, compounding, and combining substances for medical purposes; the art of the apothecary. As these substances may be mineral, vegetable, or animal, theoretical pharmacy requires a knowledge of botany, zoology, and mineralogy; and as it is necessary to determine their properties, and the laws of their composition and decomposition, of chemistry also. In a narrow sense pharmacy is merely the art of compounding and mixing drugs according to the prescription of the physician.

**Pharsalia, Battle of**, the victory b. c. 48, of Cæsar with a much smaller force, over Pompey (q. v.) at Pharsalus, now Pharsala, Thessaly, Greece.

**Pheasant**, one of the most highly prized game birds. The adult male pheasant is a beautiful bird, about three feet long. Head and neck deep steel-blue, shot with greenish-purple and brown; eye surrounded by a patch of scarlet skin, speckled with blue-black; ear-coverts brown; back a light golden-red, the feathers of the upper part tipped with velvet-black, of the lower part marked with brown. Quill feathers brown, of various shades, tail feathers oaken-brown, barred with a darker shade and with black. Breast and front of the abdomen golden-red with purple reflections, feathers edged with black; rest of abdomen and under tail-coverts blackish-brown. The female has yellowish-brown plumage, and is about two feet in length. Such is the common pheasant. There are several other species.

There have been many unsuccessful

attempts to introduce pheasants from the Old World into America, the failure being due to a lack of understanding of the birds habits. To introduce a bird to new plants, a new climate, new enemies requires a considerable time, generally several years. In Oregon, the Ringneck, popularly called the China Pheasant, often bewildered by the strange forests of Oregon would come back to the farms from which they were liberated, and eat with the chickens. These birds are now very numerous throughout the West and afford sportsmen much good hunting, especially in areas rich with berry-growing shrubbery, tall grass, and grain fields.

**Phelps, Austin**, an American clergyman and author; born in West Brookfield, Mass., Jan. 7, 1820. He was pastor of the Pine Street Congregational Church, Boston, in 1842-1848; and Professor of Sacred Rhetoric in Andover Theological Seminary, in 1848-1879. He was noted as an original writer and an eloquent preacher. He died in Bar Harbor, Me., Oct. 13, 1890.

**Phelps, Edward John**, an American diplomatist; born in Middlebury, Vt., July 11, 1822; was graduated at Middlebury College in 1840; studied at the Yale Law School; was admitted to the bar in 1843; and settled in Burlington in 1845. In 1851 he was appointed Comptroller of the Treasury and remained in the office through Fillmore's administration. In 1881-1885 he was Professor of Law in the Yale Law School and also lecturer on constitutional law in Boston University. He was minister to England in 1885-1889. During the Bering Sea dispute he was senior counsel for the United States. He died in New Haven, Conn., March 9, 1900.

**Phi Beta Kappa**, the oldest of the American college Greek-letter societies. It takes its name from the initial letters of its motto, said to be *Philosophia Biou Kubernetes*, "Philosophy is the guide of life." It was founded in 1776 in the old "Raleigh Tavern" at Williamsburgh, Va., by 44 undergraduates of William and Mary College, of whom John Marshall was one. Branches were established at Yale in 1780 and at Harvard in 1781; and today there are nearly a score in the

principal colleges and universities of the Union. The Phi Beta Kappa is now simply "an agreeable bond of meeting among graduates"; since 1831 its innocent mysteries have been open secrets.

**Phidias**, the great Greek sculptor; born in Athens, probably between 490-480 B. C. He was one of the most intimate friends of Pericles, under whose rule he was appointed director of all the great temples and monuments which were to be erected in the city. Of these the most important were the Parthenon, or temple of Athena, on the Acropolis, and the Propylæa. He executed a colossal statue of the goddess for the interior of the temple with his own hand. The well-known Elgin Marbles of the British Museum were the sculptured decorations of that unrivaled temple. Phidias spent some years at Olympia, and there he executed the most magnificent of all his works—the statue of the Olympian Zeus. The prevailing characteristic of the works of Phidias appears to have been an ideal sublimity of form which has never since been equaled. According to the generally received account, he was thrown into prison, and died there 432 B. C.

**Philadelphia**, a city coextensive with Philadelphia co., Pa.; on the Delaware and Schuylkill rivers, 85 miles S. W. of New York. It is the largest city of Pennsylvania and the third largest in the United States; area, 132 square miles: pop. (1920) 1,823,779; (1930) 1,950,961.

The city is built chiefly on a low peninsula between the two rivers. It extends N. and S. about 22 miles, and is from 5 to 10 miles in width. There is a water frontage on the Delaware river of over 16 miles, of which more than 5 miles have docks. The harbor has been greatly improved by the removal of the islands in the middle of the river, and in front of the wharves there is an average depth of 50 feet.

Among the attractions of the city is Fairmount park, one of the largest public parks in the world. It extends more than 7 miles on both banks of the Schuylkill river, and more than 6 miles on both banks of Wissahickon creek, giving it an area of over 3,000 acres, traversed by 32½ miles of driveways. In 1876 the Cen-

tennial Exposition was held here. Memorial Hall, erected at a cost of \$1,500,000, which was used for the art gallery of the Exposition, now contains a permanent industrial and art collection. Here also is the Horticultural Building filled with tropical and other plants.

In the heart of the city, at the intersection of Market and Broad streets, stands the City Hall, on a piece of ground which was formerly Penn Square. It is built of white marble and granite; is 468½ feet long by 470 wide; contains 520 rooms, and including a court yard 200 feet square in the center, covers an area of nearly 2½ acres. The central tower rises to a height of 547 feet, 3 inches, and is surrounded by a colossal statue of William Penn, 37 feet in height. The total cost of the building was over \$20,000,000.

In 1925 it was reported that there were in the city of Philadelphia 5,636 manufacturing establishments, employing 246,680 wage earners, paying \$332,414,915 for wages, and \$1,049,479,997 for raw materials, and yielding products having a combined value of \$1,937,414,991. One of the chief industries is printing and publishing, and the following statistics are given for 1925. There were 140 plants employing 7,015 wage earners, paying \$12,707,060 for wages, \$36,918,238 for raw materials, and yielding products having a combined value of \$122,294,713. Among other important products are sugar (refined), men's clothing, foundry and machine shop products, carpets and rugs, hosiery, knit goods, woolen and cotton goods, chemicals, silk and silk goods.

At the end of the school year, 1928, there were 213 elementary schools, with 202,433 pupils, 15 junior high schools with 21,024 pupils, 13 high schools with 27,452 pupils and 1 normal school with 935 students.

The institutions for higher education include the William Penn Charter school, founded in 1689; University of Pennsylvania; Girard College; Jefferson, Woman's and Hahnemann Medical Colleges; Drexel Institute; Medico-Chirurgical College; and Temple University.

Philadelphia is the central reserve city of Federal Reserve District No.

3, and in the year ended June 30, 1916, had 30 National banks, with \$21,055,000 capital, \$38,825,000 surplus, \$274,416,000 deposits, and \$522,729,000 in resources. The exchanges at the clearing-house here in the year ended Sept. 30, 1916, aggregated \$12,018,127,000, an increase in a year of \$4,050,121,000.

During the year ended June 30, 1917, the imports of merchandise here had a value of \$109,485,782 and exports \$464,519,137.

In 1916 the assessed valuation of all taxable property was \$2,346,540,000, and the net public debt, \$113,383,905.

In September, 1681, a small party of settlers, sent out by William Penn, arrived at the site of the present city, and in the following summer the place was laid out and named Philadelphia, the "city of brotherly love." The city was active in resisting British aggression in 1763-1764. On Sept. 5, 1774, the 1st Continental Congress met here, and on May 10, 1775, the 2d. Col. George Washington was appointed General and Commander-in-Chief of the American army in the State House on June 15, 1775. Here also the Declaration of Independence was adopted, July 4, and proclaimed July 8, 1776. The city was occupied by the British from September, 1777, to June, 1778. In the summer of 1787 delegates from the various States met in the State House, and framed the Constitution. The great Centennial Exposition was held here in 1876.

**Philæ**, an island in the Nile, near Assouan and S. of Syene, in Nubia, largely submerged by the great Assouan dam.

**Philip**, one of the 12 apostles, according to John's Gospel, "of Bethsaida, the city of Andrew and Peter," and who was called to follow Jesus at Bethany. After the resurrection he was present at the election of Matthias to the apostleship, but is not again mentioned. Philip the Evangelist, often confounded with the above, is first mentioned in Acts vi: 5. He preached at Samaria, where Simon Magus was one of his converts; baptized the Ethiopian eunuch; and entertained Paul and his companion on their way to Jerusalem.

**Philip II. of Macedonia**, father of Alexander the Great, and son of

Amyntas II.; born 359 B. C. He began to reign after the death of his brother, Perdiccas III., in 359. With great ability, energy, and success, he first secured the internal peace and order of his kingdom, improved the discipline of his army, and created the famous phalanx, which contributed to so many Macedonian victories. He cherished vast schemes of conquest; aspired first to make himself master of all the states of Greece, and then to invade and conquer Persia. The former was accomplished after a severe and protracted struggle culminating in the victory of Chæronea, over the allied Athenians and Thebans, 338. He soon after assembled a congress at Corinth, and was named general of the Confederate Greeks in the war to be undertaken against Persia. But in 336 he was assassinated at Ægea, and that war was reserved for his son.

**Philip II.** of France, surnamed Augustus, son of Louis VII. and of Alix, daughter of Thibault, Count of Champagne; born in 1165, succeeded his father, 1180, accompanied Richard Cœur de Lion to the Holy Land, 1190, invaded Normandy during Richard's captivity, 1193, confiscated the possessions of King John in France, after the supposed murder of Arthur, 1203, prepared to invade England at the instance of the Pope, 1213, turned his arms against Flanders, and gained the celebrated battle of Bouvines, 1214, and died in 1223. Philip Augustus was one of the ablest princes that ever reigned in France, both as a commander and an administrator.

**Philip III.**, called the Hardy, the son of Louis IX. and Margaret of Provence. He was born in 1245, and succeeded his father in 1270. The invasion of Sicily by Peter of Aragon, and the massacre of the French, known as the "Sicilian Vespers," caused him to make war against that prince, in the course of which he died in 1285.

**Philip II.** of Spain, son of the emperor Charles V. and Elizabeth of Portugal; born in Valladolid, in 1527. He married, in 1543, his cousin Mary of Portugal, who became the mother of Don Carlos, and died in 1545. In 1554 he received from his father the kingdom of Naples, and the same year, after troublesome negotiations, mar-

ried Mary, Queen of England. He was disliked in England, and soon departed. His father gave up to him the Netherlands in October, 1555, and the kingdom of Spain early in the following year. He declared war on France, and induced Queen Mary to join him; won, by his troops under the Duke of Savoy, the memorable victory of St. Quentin over the French, in 1557, and was present in person at the capture of the town, which followed. He vowed never to witness another battle, and he never did. He vowed also to show his gratitude for his success by building a monastery, which he more than fulfilled in the magnificent Escorial. A second victory over the French at Gravelines, in 1558, was followed by the peace of Cateau-Cambrésis. Immediately on his return to Spain, he began a terrible persecution of "heretics," and was the pitiless spectator at an auto-da-fe at which 40 persons perished at the stake.

The most momentous event of his reign was the revolt of the Netherlands, first excited by his edict against heretics, and his attempt to establish the Inquisition there in 1565, and resulting, after long years of war and desolation, in the establishment of the Dutch Republic. In 1565, he persecuted the Christian Moors of Granada, and provoked a revolt, which began in 1569; and after the greatest atrocities on both sides, ended by the flight or submission of the Moors in 1571. On the death of Henry, King of Portugal, in 1580, Philip conquered that country and annexed it to Spain. He made immense preparations for an invasion of England; and in 1588, the year after Drake's attack on Cadiz, his great fleet, which he named "the Invincible Armada," sailed from Lisbon; but a great storm and contrary winds damaged and threw it into disorder, and it was defeated by the English. Philip carried on intrigues in France against Henry II. and Henry IV.; but his aim was defeated by the conversion of the latter to the Roman faith. He lived to see the failure of his designs on the Netherlands, on France, and on England. It was Philip II. who removed the seat of government from Toledo, and made Madrid the capital of Spain. He died at the Escorial, after severe suffering, the

fruit of his debaucheries, Sept. 13, 1598.

**Philip**, sachem of the Wampanoag tribe of Indians, was the second son of Massasoit, who for nearly 40 years had been the first and staunchest ally of the Pilgrim settlers of Plymouth, and had obtained English names for his two sons. In 1661 Philip succeeded his brother, and formally renewed the treaties of his father, which he kept for some years. By 1671, however, goaded by the encroachments of the whites he had formed a confederation of tribes aggregating nearly 10,000 warriors; and in 1675 what is known as King Philip's War broke out. Aug. 12, 1676, at midnight, Philip and his followers were surprised by Capt. Benjamin Church. Philip was slain and his head cut off. Afterward his body was drawn and quartered, and the head was exposed on a gibbet at Plymouth.

**Philip, John Woodward**, an American naval officer; born in New York city, Aug. 26, 1840. He entered the naval academy in 1856, was made midshipman in 1861, and served during the Civil War on the "Chippewa," the monitor "Montauk" and other vessels. He was commissioned captain in 1899, and was the inspector of the "New York" during construction. During the war with Spain he commanded the battleship "Texas," which took an active part in the capture of the Spanish fleet under Cervera, at Santiago de Cuba, July 3, 1898. He was promoted to rear-admiral and made commandant of the Brooklyn Navy Yard, N. Y. Died 1900.

**Philipena** or **Filopena**. See **FILLIPEEN**.

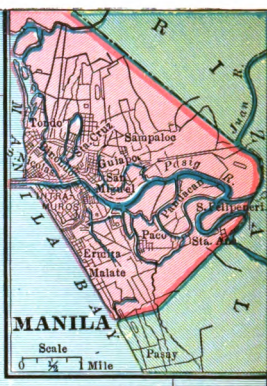
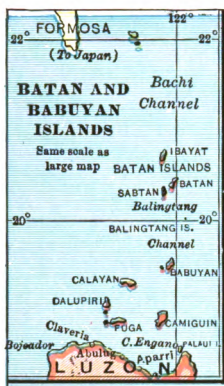
**Philippi**, a city of Macedonia; named after Philip II. of Macedon, who enlarged it because of the gold mines in its neighborhood. It is famous on account of the two battles fought in 42 B. C. between Antony and Octavianus on the one side and the republicans under Brutus and Cassius on the other, in the second of which the republic finally perished. The apostle Paul founded a Christian church here, to which one of his epistles is addressed.

**Philippian**, of or pertaining to Philippi or its inhabitants; also a na-



ASSEMBLY HALL, ANNAPOLIS NAVAL ACADEMY





## Philippine Islands

tive or inhabitant of Philippi. The Epistle of Paul the apostle to the Philippians, an epistle addressed by St. Paul, in conjunction with Timothy, "to all the saints in Christ Jesus which are at Philippi, with the bishop and deacons."

**Philippine Islands**, an archipelago in the Pacific Ocean, extending almost due N. and S. from Formosa (former name; new name Taiwan) to Borneo and the Moluccas, and comprising about 3,141 islands and islets, of which the largest are Luzon (40,369 square miles) and Mindanao (36,292 square miles); land area, including the Sulu Islands, about 127,800 square miles; pop. (1927 Est.) 11,744,172; capital, Manila, pop. (1918) 285,306. Approximately 1,100,000 of the population are non-Christians and more primitive than the Christianized peoples.

The islands with area of over 1,000 square miles each include Mindanao, Luzon, Samar, Negros, Panay, Palawan, Mindoro, Leyte, Cebu, Nokol and Masbate. Of the 7,083 islands 462 have an area exceeding one square mile. The population of principal cities: Cebu, 83,980; Legaspi, (formerly Albay), 32,372; Iloilo, 65,248; Batangas, 41,182; Ormoc, 38,427; Laoag, 40,625; Bagbay, 36,934. In 1918 there were about 72,000 foreigners.

Under the Chinese Exclusion Act, applied to the Philippines in 1902, Chinese immigration is prohibited. Under the Act Chinese laborers must be registered. The total number of Chinese was estimated in 1916 at 50,000. There are about 20,000 Americans and Europeans in the islands, including troops. The native inhabitants are mostly of the Malayan race, but there are some tribes of Negritos, numbering probably 25,000 all told.

The climate is one of the best known in the tropics. The thermometer during July and August rarely went below 79° or above 85°. The extreme ranges in a year are said to be 61° and 97°. There are three well-marked seasons—temperate and dry from November to February, hot and dry from March to May, and temperate and wet from June to October. The total rainfall has been as high as 114 inches in one year.

Little has, as yet, been done towards

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the development of the mineral resources, excepting gold. Lignite and iron (magnetite and hematite) are found in several provinces. Gold is found in almost all the important islands, and in some of them has been long worked by the natives. It is at present the most important of the mineral products. The output in 1927 was valued at \$1,651,100. Other known minerals include silver, copper, platinum, lead, manganese, petroleum, rock salt, and kaolin. The value of the entire mineral output in 1927 was over \$4,578,000.

Though agriculture is the chief occupation of the Philippines, yet only one-ninth of the surface is under cultivation. The soil is very fertile, and even after deducting the mountainous areas it is probable that the area of cultivation can be very largely extended and that the islands can support a population equal to that of Japan (63,862,538 in 1927). Lack of irrigation prevents the development of extensive tracts that could by a little enterprise be made very productive. The chief products are rice, copra, corn, hemp, sugar, tobacco, coconuts, and cacao. In 1915 there were 8,154,300 acres under cultivation, the largest area being devoted to rice (3,230,052 acres), and the value of the principal crops was \$82,601,390. In the year ended June 30, 1928, the exports of hemp were valued at 56,571,044; copra, \$36,399,456; sugar, \$98,935,036; cigars, \$17,666,153; and tobacco, other than cigars and cigarettes, \$5,873,598. The sugar cane is raised principally in the Visayas; hemp in Southern Luzon, Mindoro, the Visayas, and Mindanao; tobacco in all the islands, but the best quality and greatest amount in Luzon; rice and corn in Luzon and Mindoro; and cacao in the southern islands.

The islands are especially rich in valuable timber, gum, and dyewoods. Nine forest districts have been constituted, each containing native trees of many species, and each having experienced foresters as in continental United States.

The livestock industry is increasing steadily. On December 31, 1926, there were 1,825,000 carabao (water buffalos); 1,021,000 cattle; 309,000 horses and mules; 9,298,000 hogs;

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1,421,000 goats, and 369,000 sheep. Large horses are practically unknown, but there are great numbers of native ponies from 9 to 12 hands high, possessing strength and endurance far beyond their size.

Education in the Philippines is free, secular and co-educational, its principal aim being the spread of literacy on the basis of a common language, English. In December 1927 there was an annual enrollment of 1,107,589 pupils in the 7,361 public schools, with 293 and 25,726 Filipino teachers. The expenditure on public school education for 1927 was \$8,972,592. There are a number of special schools including the Philippine Normal School and eight provincial normal schools, the Philippine School of Arts and Trades, and 21 provincial trade schools, the Central Luzon Agricultural School and 28 provincial agricultural schools, the Philippine School of Commerce, the School for the Deaf and Blind and others. For higher education there is the State supported University of the Philippines, with a total number of students in 1927 of 5,858 in the collegiate departments, and 1,675 in the other departments, and 22 accredited private institutions of higher learning, among them the University of St. Thomas.

founded in 1611, the oldest University under the American flag. This school gives collegiate courses in liberal arts and science, and in technical courses. The total enrollment in these approved private schools and colleges in 1927 was 86,695, the total number of teachers and instructors about 3,916.

The dominant religion in the Philippines is the Roman Catholic. In 1902 an independent Filipino church was founded by the Right Reverend Gregoria Aglipay, at one time Ecclesiastical Governor of the Diocese of Nueva Segovia, under the Roman Catholic Church. The new church adheres to modern science, proclaims that science is superior to Biblical tradition, denies the possibility of miracles, and conceives God as an invisible father with one essence and a single person. Latin was originally prescribed in the church but Spanish is now the official tongue. Marriage is allowed to its apostles. In 1918 it was estimated that there were 1,417,-

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448 followers of the Independent Church.

At the end of 1927 the Manila Railroad had 657 miles on Luzon, and the Philippine Railroad Company had 131 miles on Panay and Cebu. The government has taken over the Manila Railroad Company. There were also 3,032 miles of foot and horse trails.

For the year ending June 30, 1928, the imports were \$124,943,942 and the exports were \$150,000,902.

Banking facilities are provided by the International Banking Corporation; the Hong Kong and Shanghai Banking Corporation; the Chartered Bank of India, Australia and China; and the former Banco Español Filipino, now the Bank of the Philippine Islands. In 1928 there were also 919 postal savings banks, having 229,500 deposit accounts and \$6,849,166 on deposit.

On Jan. 17, 1899, President McKinley appointed a commission consisting of Jacob G. Schurman, Admiral George Dewey, Maj.-Gen. Elwell S. Otis, Col. Charles Denby, and Dean S. Worcester, to report on the affairs of the Philippine islands. The report stated the impossibility of withdrawing the protection and government of the United States from the islands and recommended the establishment of public schools, and a civil government to replace the military. It also assured Congress of the willingness of the population to accept the protection, guidance, and authority of the United States. On April 17, 1900, President McKinley appointed a second commission, comprising William H. Taft, Dean S. Worcester, Luke E. Wright, Henry C. Ide, and Bernard Moses; defined the duties of the new commission.

On Jan. 31, 1901, the second (known as the Taft) commission enacted into law a code of civil government for the islands. It established a fair system of taxes, laid the basis for a primary school system, introduced a more exact method for collecting revenues, and created certain civil and judicial officers. On July 4, 1901, civil government was inaugurated in the Philippines. Judge Taft had been appointed civil governor; Gen. Adna R. Chaffee military governor; and the other four



members of the commission made heads of the various civil departments.

On Dec. 18, 1901, the Taft Commission submitted its annual report. It stated that the insurrection was confined to five provinces, and that the bulk of the population was law abiding.

The commission outlined a project which in brief contemplated the continuance for two years of the existing powers of the commission. Then it advocated a representative government to be formed composed of a civil governor, a legislative council, and a popular assembly, the powers of the latter being closely limited so as to prevent it from choking the government in making the budget during fits of passion or through inexperience. The President of the United States would, of course, reserve absolute veto power. The Filipinos should also have the right to be represented before Congress and the executive government at Washington by two delegates. A full account was given by the commission of the organization of the system of education which had been going on vigorously under Dr. F. W. Atkinson, the general superintendent. The English language was the basis of all public instruction, and nearly one thousand trained teachers from the United States already had been put to work in the towns and cities of the pacified provinces. On July 3, 1902, the President proclaimed amnesty to all political prisoners in the Philippines, and on July 6, Aguinaldo was given his liberty.

In 1907 Congress provided for the organization of the first representative legislative body of the islands, and on Oct. 16 following the Philippine Assembly was convened with 80 members. Subsequently Congress increased the membership of the Philippine Commission to nine.

During 1900-16 there was a strong movement in and out of Congress to terminate the retention of the islands by granting them full independence, but the various measures in both Houses of Congress failed to accomplish a change.

**Philipson, David**, an American rabbi; born in Wabash, Ind., Aug. 9, 1862; was graduated at the University of Cincinnati and at the Hebrew Union College there in 1883, and be-

came Professor of Homiletics in the Hebrew Union College, and president of the Hebrew Sabbath School Union of America. He is author of "The Jew in English Fiction," "Old European Jewries," "The Oldest Jewish Congregation in the West," etc.

**Philistines**, an ancient people, of Shemitic origin. They lived on the coast of the Mediterranean, to the south-west of Judea. Nothing is known of their first appearance in Palestine. They were there in the time of Abraham as is evident from Gen. 21:34. That they had a king is mentioned Gen. 26:8. In the time of Joshua, they were subject to five princes. Joshua was never able to expel them and in the times of the Judges they became strong enough to bring Israel into subjection. Saul perished in a pitched battle with them, David conquered them, but they revolted and continued enemies of Israel.

**Phillips, Adelaide**, an American singer; born in Stratford-on-Avon, England, in 1833. When seven years old she was taken to Boston, Mass., which was her residence the remainder of her life. Her voice was a fine contralto. She made her debut Sept. 25, 1843, at the Boston Museum, as Little Pickle. In 1850, on the advice of Jenny Lind, she went to Paris and studied with Garcia. She sang in opera in Milan in 1854, and in 1856 in New York, in "Il Trovatore." She appeared later in Paris in the same role. She died in Carlsbad, Oct. 2, 1882. Her sister Mathilde was also a contralto singer.

**Phillips, John**, English geologist; born 1800; died 1874. He was instructed in geology by his uncle, William Smith, "the father of English geology;" became professor of geology in Dublin (1844), and in Oxford (1856). Among his chief works are a "Guide to Geology" (1834), and "Life on the Earth" (1861).

**Phillips, Stephen**, English poet; b. Somerton, near Oxford, July 28, 1868. Educated at grammar schools, he became an actor, an army tutor, then turned to literature, producing "Paolo and Francesca," "Herod," "The Sin of David," etc.

**Phillips, Wendell**, an American orator and abolitionist; born in Bos-

ton, Mass., Nov. 29, 1811. He was graduated at Harvard in 1831, studied law there, and was called to the bar in 1834. But before clients came he had been drawn away from his profession to the real work of his life. A timely speech in Faneuil Hall in 1837 made him at once the principal orator of the anti-slavery party; and henceforth, till the President's proclamation of Jan. 1, 1863, he was Garrison's loyal and valued ally, his lectures and addresses doing more for their cause than can well be estimated. He also championed the cause of temperance, and that of women, and advocated the rights of the Indians. In 1870 he was nominated governor by the Prohibitionists and the Labor Party. His speeches and letters were collected in 1863 (new ed. 1884). He died in Boston, Mass., Feb. 2, 1884.

**Philology**, in a popular sense: (1) Etymology, or the science of the origin of words. (2) Grammar, or the science of the construction of language in general and of individual languages. (3) Literary criticism, or the investigation of merits and demerits in style and diction.

**Philopoemen**, called the last of the Greeks, really their last great commander. He was born in Arcadia, 253 B. C., became in 210, generalissimo of the Achaian League, and conquered the Spartans—at which time he abolished the laws of Lycurgus. The greatest of his victories in this long struggle was the battle of Mantinea. He was put to death by poison when a prisoner of the Messenians, 183 B. C., the same year that proved fatal to Hannibal and Scipio.

**Philosopher's Stone**, an imaginary stone sought for by the alchemists, which should transmute everything it touched into gold.

**Philosophy**, a term said by Diogenes Laertius to have been suggested by Pythagoras, who, on being complimented on his wisdom, said that he was not wise but a lover of wisdom (*philos sophia*), the Deity, alone being wise. Philosophy, while earnest in amassing knowledge, aimed chiefly at penetrating to the principles of things. Popularly, it is divided into natural and mental philosophy, the former investigating the physical laws of na-

ture, the latter those regulating the human mind. The term philosophy is now generally restricted to the second of these.

**Phips, or Phipps, Sir William**, governor of Massachusetts; born in Pemmaguid (Bristol), Me., Feb. 2, 1651. He was successively a shepherd, a carpenter, and a trader, and in 1687 recovered from a wrecked Spanish ship off the Bahamas bullion plate, and treasure valued at \$1,500,000; this gained him a knighthood and the appointment of sheriff of New England. In 1690 he captured Port Royal (now Annapolis) in Nova Scotia, but failed in the following year in a naval attack on Quebec. In 1692, through the influence of Increase Mathew, he was appointed governor of Massachusetts. He tolerated the witch delusion and its accompanying tragedies until his own wife was menaced by the witch hunters. He died Feb. 18, 1694, in London, England, whither he had been summoned to answer certain charges of arbitrary conduct.

**Phlebotomy, or Venesection**, the act of letting blood by opening a vein; a method of treatment formerly applied to almost all diseases, but now chiefly confined to cases of general or local plethora. Another mode of letting blood is by cupping or by the application of leeches. It has been one of the processes of the medical profession from the earliest times.

**Phœbus** ("the Bright"), an epithet, and subsequently a name, of Apollo. It had reference both to the youthful beauty of the god and to the radiance of the sun, when, latterly, Apollo became identified with Helios, the sun god.

**Phœnicia**, in ancient geography, in the largest sense, a narrow strip of country extending nearly the whole length of the E. coast of the Mediterranean Sea, from Antioch to the borders of Egypt. But Phœnicia proper was included between the cities of Laodicea, in Syria, and Tyre, comprehending mainly the territories of Tyre and Sidon, and forming then only a part of the country of Canaan. Some authorities state that Agenor was the first king of Phœnicia, 1497 B. C.; but all agree that the country itself was the seat of a great nation, and renowned for its naval enterprise at a



## Phoenix

much earlier period. A colony of Phœnicians, led by Elissa or Dido, settled in Africa 878 B. C., and founded Carthage.

**Phoenix**, or **Phenix**, in astronomy, one of the constellations of the Southern Hemisphere, N. of the bright star Achernar in Eridanus.

**Phonetic**, or **Phonetical**, representing sound; pertaining to the representation of sounds; a term applied to alphabetic or literal characters which represent sounds, as a, b, c; as opposed to ideographic, which represent objects or symbolize abstract ideas, as in Egyptian hieroglyphics. Phonetic spelling, a system of spelling in which the words are spelled exactly as they are pronounced, the sounds being represented by characters each of which represents a single sound. Phonetic printing was first suggested by Isaac Pitman, of Bath, England, in conjunction with A. J. Ellis, in the years 1843-1846.

**Phonograph**, a character used in phonography; a type or character used for expressing a sound. Also an instrument for recording and reproducing sounds, invented by Thomas A. Edison.

The first phonographic records were made on a wax cylinder which was afterward replaced by a disk of the same material. There have been many improvements made in the machines the most recent and popular being the so-called 'ortho-phonic' device which uses radio apparatus to amplify the sound. Practically all of the great musicians of the world have been recorded, and in this way the invention has proven of great educational value. The phonograph apparently is being replaced by the more modern and popular radio.

A form of this invention known as the Dictaphone is extensively used to record letters or other dictation which is afterward transcribed by a typist.

**Phonography**, a description of the sounds uttered by the organs of speech. Also the representation of sounds by certain characters, each of which represents one sound, and always the same sound. Its special application is to alphabetical writing, in which sounds or articulations are represented by signs or letters, as opposed

## Phosphorus

to the system in which the representation is by ideas, symbols, or cipher.

**Phosgene**, the luminous impression produced by pressure on the eyeball. It usually appears as a luminous centre, surrounded by colored or dark rings. Sometimes it seems to consist of bright scintillations of various forms. Similar appearances may be observed at the moments of opening or closing a strong electric current transmitted through the eyeball.

**Phosgene Gas**, or **Carbonyl Chloride**, colorless, pungent, suffocating gas, formed by exposing equal volumes of carbonic monoxide and chlorine to the action of the sun, when they combine and become condensed to one-half their joint volume. Water decomposes it into carbonic and hydrochloric acids.

**Phosphate**, in chemistry, the generic term for the salts formed by the union of phosphoric anhydride with bases or water or both. They hold a leading part in the chemistry of animal and plant life, the most important in this connection being the phosphate of soda, phosphate of lime, and the basic phosphate of magnesia. In agriculture the adequate supply of phosphates to plants in the form of manures becomes a matter of necessity in all depleted soils.

**Phosphorescence**, the property which many substances and organic beings possess of emitting light under certain conditions; also a phosphoric light. The phosphorescence of tropical, and to a large extent also of temperate seas is attributed to a small infusorial animalcule, aided by *Medusæ*, *Tunicata*, *Annelids*, etc. On land, of insects, some millipedes, the female glow-worm, and the fireflies, emit light. In the glow-worm the light is from the under side of the final segments of the abdomen. The phosphorescence of fish in a cupboard is well known; also of decaying animals in marshes.

**Phosphoric Acid**, a tribasic acid formed by the action of nitric acid upon phosphorus, or by the hydration of phosphoric anhydride. It is very deliquescent, has an intensely sour taste, and reddens litmus paper. It is not poisonous.

**Phosphorus**, a non-metallic pentad element; found in a state of combina-

tion in the unstratified rocks, the soil, the organism of plants, and the bodies of animals. Discovered by Brandt in 1669. Used on a very large scale in the preparation of safety matches.

**Photo-engraving**, the preparation of printing blocks or plates by photography.

**Photography**, the process of obtaining the representation of objects, through the aperture, with or without lenses, of a camera obscura (q. v.), on salts of silver contained in a gelatine film spread on glass or celluloid, the subsequent development and fixing of the image, and the printing of copies, completing the process. Its practical invention dates from the successes of Daguerre (q. v.), Niepce, and Talbot, between 1814 and 1839; its great modern development after the nitrate of silver and wet collodion process perfected in 1850, had given way about 1880, to the bromide of silver and dry gelatine emulsion on glass or celluloid, discovered by Dr. L. Maddox in 1871. When the light strikes the sensitized film in a camera, a chemical change takes place in the salts, producing a negative in which the lights and shades are reversed to what they are naturally. The image is latent or invisible until developed, i. e., placed in a liquid such as hydrokinine combined with an alkali, which forms an opaque compound with the part of the salt affected by the light; the developed image is then fixed or made permanent in a solution of hyposulphite of soda, which dissolves the salt from parts unaffected by light, and leaves virtually a light or sun-engraved silver plate from which positive copies are printed by contact with sensitized paper, and exposure to light.

The many forms of cameras, lenses, shutters, films, plates, printing papers, etc., and the applied uses of photography are too numerous to be detailed. One of its notable commercial developments is **AMATEUR PHOTOGRAPHY**, which has had phenomenal and increasing popularity since the advent of the "dry-plate." **COLOR PHOTOGRAPHY**, or the reproduction by photography of objects in their natural colors, is a branch that has received much scientific investigation and experiment. The most successful at-

tempts hitherto, are those of Cros and Charpentier of Paris, Prof. Joly of Dublin, and McDonough of Chicago. The general method is to make three negatives through red, blue, and green glass, on specially sensitized and developed plates, and print by superimposition.

**Photogravure**, a term applied to methods of producing, by photography, plates for printing in a copperplate press.

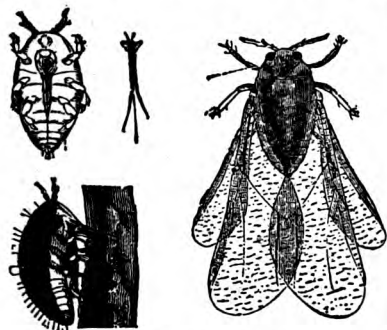
**Photoheliograph**, an instrument for photographing the sun.

**Phrenology**, the science or doctrine which teaches that a relation exists between the several faculties of the human mind and particular portions of the brain, the latter being the organs through which the former act. The localization of the several faculties was first attempted by Dr. Franz Joseph Gall, who gained, in 1804, a valuable coadjutor in Dr. Spurzheim. When Spurzheim visited Edinburgh, he met Mr. George Combe, who adopted his views, and in 1819 published "Essays on Phrenology," ultimately developed into his "System of Phrenology," which became very popular. Gall enumerated nearly 30, Spurzheim 35, mental faculties which he considered as primitive. These, Spurzheim divides into moral, or affective, and intellectual. The affective faculties are subdivided into propensities producing desires or inclination, and sentiments, which along with this excite some higher emotion. The intellectual faculties are similarly divided into perceptive and reflective. They are then localized on the brain, or rather on the skull. See **BRAIN**; **SKULL**.

**Phrygia**, in ancient geography, an inland province of Asia Minor. It was called Phrygia Pacatiana, and also Phrygia Major, in distinction from Phrygia Minor, which was a small district of Mysia near the Hellespont, occupied by some Phrygians after the Trojan War. This region was a high table-land, fruitful in corn and wine and celebrated for its fine breed of cattle and sheep.

**Phylloxera**, in entomology, a genus of insects allied to the Aphids and Coccid families. The Phylloxeridæ attach themselves to various plants, on the juice of which they feed, and

which they often injure or destroy. *P. vastatrix* is the name given to an insect of this family, which, since 1865, has committed great devastation in the vineyards of France. Great numbers of this insect appear on the roots of the vine, where they produce galls, and their punctures are so nu-



PHYLLOXERA INSECT.

merous and incessant that the roots can no longer supply nutriment to the plant, which fades and dies. There is a form which lives on the leaves, also producing galls.

**Physician**, one who is skilled in or practises the art of healing; one who, being duly qualified, prescribes remedies for diseases; specifically one who holds a certificate showing that he has passed an examination before a competent authority, such as the medical colleges of the United States or the State boards of medicine, authorizing him to practise. Strictly speaking a physician differs from a surgeon, in that the former prescribes remedies for diseases, while the latter performs operations.

**Physics**, a study of the phenomena presented by bodies. It treats of matter, force and motion; gravitation and molecular attraction, liquids, gases, acoustics, heat, light, magnetism, and electricity. It is called also natural or mechanical philosophy. In its broadest acceptance the term physics includes chemistry; specifically it is limited to those phenomena based on the molecule as a unit, whereas the unit of chemistry is the atom.

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**Physiognomy**, the art or science of judging of a person's nature or character by his outward look, especially by his facial features and characteristics. In the ordinary business of life, all men are more or less influenced by the belief that the character and disposition of a person may, in some measure, be judged of by his physical appearance, and none have more confidence in this way of judging than those who have most occasion to act on it.

**Physiology**, the science which treats of the processes which go on in the bodies of living beings under normal conditions, and of the use of their various parts or organs. It is divided into plant physiology, animal physiology (according to whether plants or animals are the subject of study), and human physiology (a branch of animal physiology in its relation to man).

**Phytology**. See BOTANY.

**Pianoforte**, a musical instrument, the sounds of which are produced by blows from hammers, acted on by levers called keys. This is probably the most widely-known and generally-used musical instrument in the world. The earliest form of pianoforte, early in the 18th century, was perhaps, in some respects, inferior to a fine harpsichord, but it possessed the elements of expansion, as now exhibited in a modern grand trichord pianoforte of more than seven octaves compass, with every gradation of sound, from pianissimo to a splendid fortissimo, and the most sensitive and delicate mechanism between the finger and the hammer.

**Piassaba**, or **Piassava**, a strong vegetable fiber imported from Brazil, and largely used for making brooms. It is chiefly obtained from palms.

**Plaster**, or **Piastre**, a coin of various values. The gold piaster of Turkey = 4.4c.; the silver piaster = 4.35c.; the Egyptian piaster = 4.9c.; the Spanish piaster is synonymous with the United States dollar. The old Italian piaster was equivalent to about 89 cents.

**Platt, Donn**, an American journalist; born in Cincinnati, Ohio, June 29, 1829, was secretary of legation at Paris, and was for nearly a year charge d'affaires; during the Civil

War was assistant adjutant-general on the staff of Gen. Robert C. Schenck; was one of the founders of the New York "Sun" and afterward of the Washington "Capital," which he edited for two years. He died in Cleveland, O., Nov. 12, 1891.

**Piatt, John James**, an American poet; born in Milton, Ind., March 1, 1835. He entered journalism; became clerk of the United States Treasury Department and of the House of Representatives; and from 1882 to 1894 was consul at Cork, Ireland. His works include: "Poems by Two Friends," with W. D. Howells; "Poems in Sunshine and Firelight"; "Idylls and Lyrics of the Ohio Valley"; etc. He died in 1917.

**Piatt, Sarah Morgan (Bryan)**, an American poet, wife of John J.; born in Lexington, Ky., Aug. 11, 1836. Her best-known works are: "A Woman's Poems"; "A Voyage to the Fortunate Isles"; "Dramatic Persons and Moods"; and "An Enchanted Castle."

**Piazza**, a square open space surrounded by buildings or colonnades; popularly, but improperly, applied to an arcaded or colonnaded walk under cover, and even to a veranda.

**Pica**, an alphabetical catalogue of things and names in rolls and records; in medicine, a vitiated appetite, which causes the person affected to crave things unfit for food, as coal, chalk, etc.; in printing, a name given to a size of type, 72 ems to the foot, or 6x6 to the square inch. It is the standard of measurement in printing.

**Piccini, Niccolo**, an Italian musical composer; born in Bari, Italy, in 1728. He composed comic and serious operas, chiefly for the stages of Rome and Naples, with such success that for many years he was without a rival in Italy. He wrote over 150 operas, besides numerous oratorios and cantatas. He died in Passy, France, May 7, 1800.

**Piccolo**, a small flute, having the same compass as the ordinary orchestral flute, but its sounds are one octave higher than the notes as they are written; called also an octave flute.

**Piccolomini**, a distinguished Siennese family, still flourishing in Italy in two branches. The two most cele-

brated members are: (1) Aeneas Sylvius Bartholomæus, afterward Pope Pius II. (2) Octavio, a grand-nephew of the first; born in 1599, died in Vienna in 1656. He served in the armies of the German emperor, and became one of the distinguished generals in the Thirty Years' War. He was a favorite of Wallenstein, who entrusted him with a knowledge of his projects, when he purposed to attack the emperor. In spite of this he made himself the chief instrument of Wallenstein's overthrow, and after the latter's assassination (1634) was rewarded with a portion of his estates.

**Pice**, a small East Indian coin, value about three-quarters of a cent.

**Pichegru, Charles**, a French military officer; born in Arbois, France, Feb. 16, 1761, of humble parents, but receiving a good education under the monks of his native town. Entering the army he rose to be sergeant. The revolution elevated him to the rank of general, and, in 1794, he succeeded General Hoche in the command of the Army of the North. In 1797 he was elected a member of the Legislative body; but his opposition to the Directory, and his speeches in favor of the royalist emigrants, occasioned an accusation against him as designing to restore royalty. He was ordered without trial to be transported to Cayenne, whence he escaped to England, where he remained till the spring of 1804; he returned to Paris, was again apprehended and sent to the Temple, where he was found strangled in his bed, April 5, 1804.

**Pickens, Andrew**, an American military officer; born in Paxton, Pa., Sept. 13, 1739, of Huguenot ancestry. In 1752 he removed to South Carolina; was engaged in the expedition against the Cherokees in 1761. During the Revolution he was promoted Brigadier-General; took part in the defense of South Carolina against the British. He served in Congress from 1793 to 1795; and made treaties with the Indians. He died in Tomassee, S. C., Aug. 17, 1817.

**Pickens, Israel**, an American politician; born in North Carolina, in 1780. He was a Democratic member of Congress from North Carolina in 1811-1817; governor of Alabama in 1821-1825; and became United States

**Pickens**

Senator in 1826. He died near Matanzas, Cuba, in 1827.

**Pickens, Fort**, a fort on Santa Rosa Island, Pensacola harbor, held by a small Union force under Lieut. A. J. Slemmer at the beginning of the Civil War. It refused to surrender when besieged by the Confederates in 1861, and was held till reinforced.

**Pickerel**, a small pike, a young pike. The term is applied to several species of fishes belonging to the pike family.

**Pickering, Charles**, an American physician, grandson of Timothy; born in Susquehanna co., Pa., Nov. 10, 1806. He traveled extensively, and published the volumes: "The Races of Man and their Geographical Distribution"; "Geographical Distribution of Animals and Man"; "Chronological History of Plants." He died in Boston, March 18, 1878.

**Pickering, Edward Charles**, an American astronomer, great-grandson of Timothy Pickering; born in Boston, Mass., July 19, 1846; was graduated at Harvard in 1865; Professor of Astronomy and Geodesy, and Director of the Observatory at Harvard after 1876. On July 21, 1901, he photographed the spectrum of lightning, from the study of which he developed a revolutionary scientific theory of the compound nature of the so-called chemical elements. Died, 1919.

**Pickering, John**, an American philologist, son of Timothy; born in Salem, Mass., Feb. 7, 1777. He held many important public positions; was president of the American Academy of Arts and Sciences, and a member of various learned associations at home and abroad. He published a paper on the "Adoption of a Uniform Orthography for the Indian Languages"; a "Vocabulary of Words and Phrases Peculiar to the United States"; etc.; and wrote many pamphlets on scientific and political questions. He died in Boston, May 5, 1846.

**Pickering, Timothy**, an American statesman; born in Salem, Mass., July 17, 1745; was graduated at Harvard in 1763, and admitted to the bar in 1768. He participated in the battle of Lexington; in 1776 joined the Continental army in command of 700 men; was soon appointed adjutant-

**Pickett**

general by Washington; in 1780 was selected for the post of quartermaster of the army, and from that time till the close of the war conducted his department with great skill. Shortly after his resignation, he united with Patrick Henry and Alexander Hamilton in opposing the measure that drove the Tories from the country. He negotiated a treaty between the United States and the Six Nations in 1791, and a month later was appointed Postmaster-General. He was Secretary of State under Presidents Washington and Adams, but was dismissed during the "X. Y. Z." papers dispute in 1800. He retired from politics for a time, but was elected to the United States Senate in 1804, and from that time continued actively in politics. He died in Salem, Jan. 29, 1829.

**Pickering, William Henry**, an American astronomer; born in Boston, Mass., Feb. 15, 1858; brother of Edward Charles Pickering; was graduated at the Massachusetts Institute of Technology in 1879; became assistant professor at the Harvard Observatory; and conducted several expeditions to observe the total solar eclipses in different parts of the Western Hemisphere in 1878-1893. He established astronomical stations in Southern California in 1889; at Arequipa, Peru, in 1891; and at Mandeville, Jamaica, W. I., in 1900. He has climbed over 100 mountain peaks.

**Picket**, a stake with a sharpened end, used in laying off ground for fortifications. Also a stake sharpened at both ends; one driven into the ground and the other acting as an obstacle to the advance of the enemy. Also a guard posted in front of an army to give notice of the approach of the enemy.

**Pickett, George Edward**, an American military officer; born in Richmond, Va., Jan. 25, 1825; was graduated at the United States Military Academy in 1846; served in the Mexican War as lieutenant and was made captain in 1855. In 1861 he left the United States service and entered the Confederate army. He was commissioned Brigadier-General and was distinguished throughout the war for bravery and activity. In 1862 he was made Major-General. He took a prominent part in the battles of Fredericks-



burg, Gettysburg (where his division made the famous "Pickett's charge"), Petersburg, and Five Forks. He died in Norfolk, Va., July 30, 1875.

**Pickford, Mary,** (Mrs. Douglas Fairbanks). Born 1893 at Toronto, Canada. An American actress noted for her great success as a motion picture star. She began her stage career at early age of 5. Her first husband was Owen Moore, also noted as a motion picture actor. She divorced him in 1920 marrying the famous screen actor Douglas Fairbanks the same year. She now heads her own company with studios at Hollywood, California.

**Picquart, George,** a French military officer; born in Strassburg in 1854; was educated at St. Cyr, 1872-1874, and at the General Staff School in 1874-1876, gaining high places at the examinations in both schools. In 1896 he was given the rank of lieutenant-colonel, but then he began his inquiries into the Dreyfus case, moved thereto by certain discoveries which he made as to Major Esterhazy. In this he was at first encouraged by his official superiors, but afterward discouraged, and in January, 1897, he was sent in disgrace to Tunis. He returned to take a prominent part in the inquiries and legal proceedings which took place in the winter of 1897 and during 1898, and his evidence formed the strongest proof of the illegality of the trial at which Dreyfus was condemned, and of the astounding methods employed by the War Office to hush up the affair. In 1898 he was placed on the retired list, and afterward prosecuted on a charge of revealing War Office secrets, and imprisoned. Later he was promoted to Brigadier-General; in 1906 became Minister of War. D. Jan. 19, 1914.

**Picton, Sir Thomas,** a British military officer; born in Poyston, Pembrokeshire, England, in August, 1758. He entered the army in 1772. In 1794 he went out to the West Indies; took part in the conquest of several of the islands, including Trinidad, and was appointed (1797) governor of the last named, being shortly afterward promoted general. There he plotted for the overthrow of Spanish rule in South America. Later he was with Wellington, fought at Quatre Bras,

and at Waterloo fell leading his men to the charge, June 18, 1815.

**Pidgin, Charles Felton,** an American statistician; born in Roxbury, Mass., Nov. 1, 1844. He invented many machines for the mechanical tabulation of statistics, among them the electric adding and multiplying machine, addition register, and typewriter tabulator. He has written novels and musical compositions.

**Pierce, Franklin,** an American statesman, 14th President of the United States; born in Hillsboro, N. H., Nov. 23, 1804. He was educated in the schools of his native State and at Bowdoin College, where he studied in company with Longfellow, Hawthorne, and Prentiss, graduating in 1824. In 1833 he entered Congress, serving four years, and in 1837 was elected to the United States Senate, being the youngest member of that body, that contained such men as Webster, Clay, Calhoun, Benton, Buchanan, and Silas Wright. In 1842 he resigned from the Senate and retired to private life, declining several public offices tendered him. In 1846 he enlisted for the Mexican War, was appointed brigadier in the volunteer army, and led his brigade in the battles of Contreras and Churubusco. In 1852 he was nominated for the presidency on the 49th ballot, by the Democratic National Convention, and was elected by an electoral majority over General Scott of 254 to 42. During his administration the Missouri Compromise was repealed, a reciprocity treaty for trade with the British American colonies was made; a treaty with Japan was established; and the Mexican boundary disputes settled. After his term expired, failing of a re-nomination, he traveled abroad for three years, and, returning, lived thereafter in retirement at Concord, where he died, Oct. 8, 1869.

**Pierce, Henry Niles,** an American clergyman; born in Pawtucket, R. I., Oct. 19, 1820. He spent many years in the West as a missionary, and was consecrated Protestant Episcopal Bishop of Arkansas in 1870, being the first incumbent and holding the office for 25 years. He published many essays, sermons, and reviews; and a volume of poems, etc. He died Sept. 5, 1899.

**Pierpont, Francis Harrison**, an American statesman; born in Monongalia co., Va. (now W. Va.), in 1815. At the beginning of the Civil War he became governor of the counties of Virginia that remained loyal to the Union, and were organized as the State of West Virginia in 1861; was then governor of all the loyal counties in Eastern Virginia; and from June, 1863, till May, 1865, was chief executive of the present Virginia. He died in Pittsburg, Pa., March 24, 1899.

**Pierrefonds**, a village on a lake at the S. border of the Compiegne forest, France, and 9 miles S. E. of the town of Compiegne. It is noted for its feudal castle rising high above the surrounding houses, which was originally a fort built by Louis d'Orleans in 1590. It was battered to pieces by order of Richelieu in 1617, as the stronghold of Fonde, and was almost entirely rebuilt by Napoleon III. at a cost of about \$1,000,000. Its walls are flanked by eight circular towers, and its upper ward is reached over double drawbridges. Pop. about 2,000.

**Pierrepoint, Edwards**, an American diplomatist; born in North Haven, Conn., March 4, 1817; was graduated at Yale in 1837, and at its Law School in 1840; became a member of the Ohio bar, and after five years removed to New York city. He was elected a judge of the Superior Court of New York in 1857. In 1875 he became attorney-general of the United States in Grant's administration; and in the following year was appointed United States minister to Great Britain. He died in 1892.

**Pigeon English**, the dialect used by English and American residents in China in their dealings with the native traders.

**Pig Iron**, iron in oblong masses, or "pigs," as turned out by the smelting furnace. The production in the United States in the calendar year 1923 was the largest on record, 40,361,146 gross tons valued at over \$1,120,000,000, produced and marketed in 20 States. Iron ore was mined in 28 States, the marketed production being 47,128,000 long tons. the following States, Minnesota, Michigan, Alabama, and New York leading.

**Pike**, a military weapon, consisting of a narrow, elongated lance-head fixed to a pole or a simple spike of metal. The end of the staff had also a spike for insertion in the ground, thus allowing a musketeer to keep off the approach of cavalry while attending to his other arms. It is now superseded by the bayonet. Also, a fish, the common pike. It is one of the larger fresh-water fishes, sometimes attaining a length of five or six feet, and much esteemed for food.

**Pike, Albert**, an American writer; born in Boston, Mass., Dec. 29, 1809. He became a lawyer in Arkansas, where he revised the statutes. He was attorney for the Cherokees, receiving at one time a fee of \$100,000. In 1839 his "Hymns of the Gods" was published. He also wrote works on Masonry. He served in an Arkansas regiment during the Mexican War, and in the Civil War organized some Indian regiments which he led in the battles of Pea Ridge and Elkhorn. After the war he was editor of the Memphis "Appeal" till 1868. Died in Washington, D. C., April 3, 1891.

**Pike, Mrs. Mary Hayden (Green)**, an American novelist; born in Eastport, Me., Nov. 30, 1825. She will be best remembered as the author of "Ida May," a novel dealing with slavery and Southern life, which had a large sale.

**Pike, Zebulon Montgomery**, an American military officer; born in Lamberton, N. J., Jan. 5, 1779; was appointed an ensign in his father's regiment in 1799; conducted an expedition sent by the government to trace the Mississippi to its source in 1805; also made explorations in Louisiana Territory, discovering Pike's Peak and reaching the Rio Grande in the course of his travels. In 1813 he was promoted Brigadier-General, and on April 13 of that year while in command of the attack on York (now Toronto), in Upper Canada, was killed.

**Pike Perch**, a genus of fishes closely allied to the perch, but showing a resemblance to the pike in its elongated body and head. It occurs in the fresh waters of North America, such as the Great Lakes, the Upper Mississippi, and the Ohio.

**Pike's Peak**, a peak of the Rocky Mountains, in Colorado, 65 miles S.

of Denver, discovered by Captain Pike, U. S. A., in 1806. It rises to a height of 14,147 feet. On its summit is one of the highest meteorological stations in the world; while at the base, at Colorado Springs, there is a low level station. There is a railway to the top, 9 miles long ( $4\frac{1}{2}$  miles of curves), with a maximum gradient of 1 in 4.

**Pilate, Pontius, a Roman ruler**, who became governor of Judæa, A. D. 26. He commanded in that country 10 years. The Jews brought Jesus Christ before Pilate, who, perceiving that envy and malice occasioned their charges, would have scourged the prisoner and dismissed him, but being threatened with the wrath of Cæsar, Pilate delivered Jesus, whom he pronounced innocent, to be crucified. He is said to have subsequently treated the Samaritans with great cruelty, for which he was recalled by Tiberius, and banished to Gaul, where he slew himself, A. D. 37 or 38.

**Pilgrimage, a journey undertaken by a pilgrim**; specifically, a journey to some distant place, sacred and venerable for some reason, undertaken for devotional purposes. In Scripture, the journey of human life. (Gen. xlvii: 9.) Pilgrimages are an essential part of the Hindu and Mohammedan systems, and the visits to Jerusalem three times a year of the Jewish race were of the nature of pilgrimages.

**Pilgrim Fathers, the name given to 102 Puritans**, who sailed in the "Mayflower," from Plymouth, on Sept. 6, 1620, to seek in America the religious liberty denied them in England. Landing on Plymouth Rock, they, on Dec. 25, 1620, founded a colony, which became the germ of the New England States.

**Pillory, formerly a common instrument of punishment for persons convicted of forestalling, use of unjust weights, perjury, forgery, libel, etc.** It consisted of a frame of wood, erected on a pillar or stand, and furnished with movable boards, resembling those of the stocks, and holes through which the offender's head and hands were put. In this position he was exposed for a certain time to public view and insult. The use of the pillory was abolished in France in 1832, in England in 1837, and in the United States

about 1839, except in the State of Delaware.

**Pillow, Fort, a defensive work**, erected by the Confederates during the Civil War, about 40 miles N. of Memphis, Tenn., and abandoned by them, June, 1862, and occupied by the Union forces till April, 1864, when it was taken by the Confederates under General Forrest, and the garrison killed.

**Pillow, Gideon Johnson, an American military officer**; born in Williamson co., Tenn., June 8, 1806; served with distinction during the Mexican War, first as a Brigadier-General and later as a Major-General of volunteers. In the Civil War he was appointed a Brigadier-General in the Confederate army; was second in command at Fort Donelson in February, 1862, and with his chief, Gen. John B. Floyd, escaped, leaving General Buckner to surrender the fort to General Grant. He died in Lee co., Ark., Oct. 6, 1878.

**Pills, medicines made in globules, of a convenient size for swallowing whole**, the medicine being usually mixed up with some neutral substance such as breadcrumbs, hard soap, extract of liquorice, mucilage, syrup, treacle, and conserve of roses. The coverings are liquorice powder, wheat flour, fine sugar, and lycopodium. In many cases pills are now enameled or silvered, which deprives them of most of their unpleasantness. Pills are a highly suitable form for administering medicines which operate in small doses, or which are intended to act slowly or not to act at all till they reach the lower intestines.

**Pilot, one who, being properly qualified by experience, and having passed certain examinations, is appointed by the competent authority to conduct ships into or out of harbor or along particular coasts, channels, etc., at a certain fixed rate, depending on the draught of the vessel and distance.** The pilot has the entire charge of the vessel in the pilot's water.

**Pilot Fish, a small pelagic fish**, about a foot long, of bluish color, marked with from five to seven broad, dark, vertical bars. It owes its scientific and popular English name to its habit of keeping company with ships and large fish, generally sharks.

**Pilot Knob**, a remarkable hill in Missouri, about 86 miles S. W. of St. Louis. It is nearly 500 feet high, and is composed almost entirely of magnetic iron ore.

**Piloty, Karl von**, a German painter; born in Munich, Bavaria, Oct. 1, 1826. Died in Munich, July 21, 1886.

**Pin**, a piece of wood, metal, etc., generally pointed and used for fastening separate articles together, or as a support; a peg, a bolt. Also a small piece of wire, generally brass, headed and pointed, used as a fastening, etc., since antiquity.

Pins were made by hand of metal in the 16th century, and were very costly. Before that time small skewers of ivory or wood were used. The first pin-making machine was made in 1824 by an American living in England. Many improvements have since been introduced.

**Pinchot, Gifford**, an American forester; born in Simsbury, Conn., Aug. 11, 1865; studied forestry in several European countries; inaugurated the first systematic forestry work in the United States at Biltmore, N. C., in 1892; became chief of the National Forest Service in 1898 and Professor of Forestry at Yale in 1903; had a notable controversy with Secretary Ballinger, of the Interior Department, concerning the conservation of natural resources in Alaska, in 1908-1910. In 1922 he was elected Governor of Pennsylvania by an overwhelming majority.

**Pinckney, Charles Cotesworth**, an American statesman; born in Charleston, S. C., Feb. 25, 1746. He was Washington's aide-de-camp at the battles of Brandywine and Germantown, and afterward, as colonel, saw much active service, till 1780, when he was taken prisoner at the surrender of Charleston, and retained till the close of the war. A member of the convention that framed the Constitution of the United States (1787), he introduced the clause forbidding religious tests as a qualification for office. He declined the secretaryship of war in 1794, and of state in 1795; in 1796 he was sent as minister to France, but the Directory refused to receive him, and he had to quit the country. It was while on this mission that, when it was intimated that peace might be

granted in return for a money payment, he made the reply, "Millions for defense, but not a cent for tribute." In 1800-1808 he was thrice an unsuccessful Federalist candidate for the presidency. He died Aug. 16, 1825.

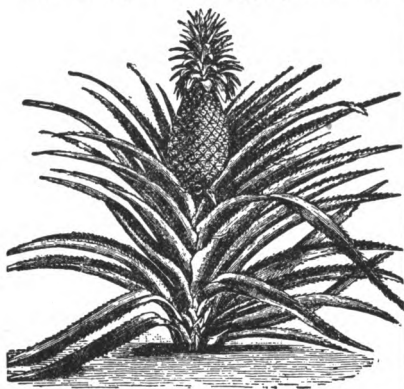
**Pinckney, Thomas**, an American diplomatist, brother of Charles C.; born in Charleston, S. C., Oct. 23, 1750. In the Revolutionary War as aide to General Lincoln he distinguished himself at the assault on Savannah and was severely wounded at Camden in August, 1780. He was governor of South Carolina in 1787-1789; United States minister to Great Britain in 1792-1794, and to Spain in 1794-1796; a Federalist candidate for the presidency in 1796; and member of Congress in 1797-1801. He died in Charleston, Nov. 2, 1828.

**Pindar**, the great Greek lyric poet; born in or near Thebes, in Boeotia, about 522 B. C. Pindar excelled in all varieties of choral poetry, hymns to the gods, pæans, odes for processions, drinking songs, etc. But the only poems of his now extant are the "Epinikia, or Triumphal Odes," composed in celebration of victories at the great public games, the Olympian, Pythian, Nemean, and Isthmian. Pindar attained the highest renown in his own age, and as a lyrical poet has no rival. When Thebes was destroyed by Alexander, the conqueror spared the house of Pindar. He died in 443 B. C.

**Pine**, a genus of trees of the natural order Coniferae. The Linnæan genus includes all kinds of fir, larch, and cedar; but as now limited the genus *Pinus* is distinguished by monocious flowers and woody cones with numerous two-seeded scales, the scales having an angular truncated apex. The leaves are linear and very narrow, of a very dark green color, growing in clusters or in pairs, and surrounded by scarious scales at the base. To this genus belong many noble and useful trees. Many species of pines, some of them very beautiful and very valuable, are found in North America. Besides those long known, and which are found in the States and colonies near the Atlantic, a number of the noblest species of this genus have, during the 19th century, been discovered in California and the N. W. parts of the Continent. The red Canadian

pine is found from Canada to the Pacific, but does not reach far S. in the United States. It is the yellow pine of Canada and Nova Scotia.

**Pineapple**, a plant of the natural order Bromeliaceae. The flowers rise from the center of the plant, and are in a large conical spike, surmounted by spiny leaves called the crown. The conical spike of flowers ultimately becomes enlarged and juicy, constituting the pineapple, considered



PINEAPPLE.

one of the finest of fruits. More than 50 varieties have been produced. The plant grows in the S. portion of the United States and in Hawaii. In the islands they sometimes reach the weight of 17 pounds, though the average weight is six. Since 1883 there have been large exports of this fruit from the various islands.

**Pine Bluff**, city and capital of Jefferson county, Ark.; on the Arkansas river and several railroads; 48 miles S. E. of Little Rock; is the trade center of a large farming section; makes extensive shipments of hides and cotton; manufactures cotton-seed oil and meal, flour and grist, cotton-gins, bank furniture, and machinery; and contains the Merrill Institute, a Normal College for colored students, and large railroad shops. Pop. (1930) 20,760.

**Ping-Pong**, table lawn tennis, a game that was introduced from Eng-

land and became very popular in the United States. The game is played very much as is the regular game of tennis.

**Pingree, Hazen S.**, an American manufacturer; born in Denmark, Me., Aug. 30, 1842. He enlisted in the United States army in 1862; served throughout the war and was in the principal battles. At the close of the war he settled in Detroit, Mich., and engaged in the shoe business, subsequently becoming the head of the largest factory of its kind in the West. He was elected mayor of Detroit in 1889, on the Reform ticket. His radical ideas on the reform of monopolies, etc., caused much agitation, especially in connection with street car companies. He also instituted the "potato patch," a scheme for employing applicants for charity in productive labor, a plan which has been adopted by other cities. In 1896 he was elected governor of Michigan, holding the office of mayor also, till March 19, 1897, when according to a decision of the Supreme Court he relinquished the latter office. He was reelected governor in 1898. He died June 18, 1901.

**Pinkerton, Allan**, an American detective; born in Glasgow, Scotland, Aug. 25, 1819. In 1840 he went to Canada and thence to Chicago, where in 1850 he joined the detective department. Subsequently he organized the detective agency which still bears his name. He wrote many interesting stories of his experiences, which were afterward collected in one volume. He died July 1, 1884.

**Pinkney, William**, an American diplomatist; born in Annapolis, Md., March 17, 1764; was admitted to the bar in 1786; was a member of the Legislature of his State that ratified the Constitution of the United States. In 1796 Washington appointed him a commissioner to determine the claims of American merchants to compensation for losses and damages caused by the English government. In 1806 he was sent with James Monroe to treat with the English government regarding the latter's repeated violations of the rights of neutrals and was resident minister in London in 1807-1811, when President Madison appointed him attorney-general of the United



States. In 1816 he was appointed minister to Russia and special envoy to Naples. After his return in 1818 he resumed law practice. In 1820 he was elected to the United States Senate. He died in Washington, D. C., Dec. 25, 1822.

**Pinnated Grouse**, known also as the prairie hen, or prairie chicken. The male is remarkable as possessing two erectile tufts in the nape, and an air bladder (connected with the windpipe, and capable of inflation) on each side of the neck, in color and shape resembling small oranges; general plumage brown, mottled with a darker shade; habitat, prairies of the Mississippi valley, from Louisiana, N.

**Pint**, a measure of capacity used both for dry and liquid measures. It contains 34.65925 cubic inches, or the eighth part of a gallon. In medicine it is equivalent to 12 ounces.

**Pintail Duck**, has the upper parts and flanks ash, with narrow stripes of



PINTAIL DUCK.

black; under parts white; head umber-brown; tail pointed. It inhabits the N. of America and Europe.

**Pinzon, Vincent Yanez**, and **Martin Alonzo** (brothers), Spanish navigators, who had commands in Columbus' first voyage, and by whose exertions mainly it was that a sufficient number of men were induced to risk their lives on this perilous enterprise. Vincent Yanez was the more distinguished of the brothers; he made several voyages, on the most important

of which he sailed in December, 1499, and discovered Brazil and the river Amazon, three months before Cabral took possession of South America for the crown of Portugal.

**Piotrkow**, a town and capital of a government of the same name in Rep. of Poland, 57 miles from the Prussian border, 90 miles S. W. of Warsaw. It was the meeting place of the Diets of the Kingdom of Poland in the 15th and 16th centuries, and many of the Polish kings were elected here. It is one of the oldest towns in Poland, and was the scene of a battle in 1769, when the Russians defeated the army of the Polish Bar Confederation. A notable attraction is the military church, formerly a castle built by Casimir the Great in the 14th century, who also surrounded the town with walls. Pop. (1925 Est.) 41,113.

**Pipa**, a genus of Batrachian reptiles, closely allied to the common toad. The best-known species is the Surinam toad, which is considerably larger than the common toad of this country.

**Pipe**, a wine-measure, usually containing two hogsheds or 105 imperial or 126 wine gallons; two pipes or 210 imperial gallons make a tun. The size of the pipe varies according to the kind of wine contained; a pipe of Madeira contains 110 wine gallons; of sherry, 130; of port, nearly 138, and Lisbon, 140.

**Pipe Clay**, a variety of clay adapted by its plasticity and freedom from impurities for the manufacture of pipes.

**Pipefish**, a fish distinguished by a long, slender, tapering body, and by jaws united to form a tube or pipe, bearing the mouth at the tip. There are several species.

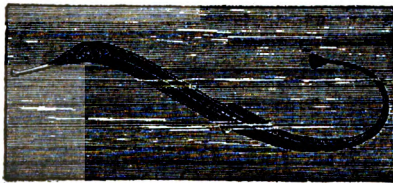
**Piping Crow**, a bird from New South Wales. It has great powers of mimicry; called also the flute player.

**Pipistrelle**, the most widely distributed of the bats; color reddish-brown, paler beneath. The wings extend down to the base of the toes, and their membrane, like that of the ears, is of a dusky tint. This bat is specially a dweller in temperate regions, its period of hibernation is short, and the tail is used as an organ of prehension.

**Pipit**, or **Titlark**, a genus of perching birds possessing striking affinities with the larks, which they resemble in the large size of the hinder claw, but commonly classed with the wagtails, which they closely resemble in their habits of running swiftly on the ground. One species is common in the United States. All the pipits build their nests on the ground. The song in all consists of a clear, simple note.

**Pippi Giulio.** See GIULIO ROMANO.

**Piracy**, the act, practice, or crime of robbing on the high seas. This offense at common law consists in committing those acts of robbery and depredation on the high seas which if committed upon land would have amounted to felony there. But other offenses have, by various statutes, been made piracy, and liable to the same penalty. Thus trading with, or in any



PIPEFISH.

way aiding, known pirates, is piracy. So, too, any commander or seaman of a ship who runs away with any ship, boat, goods, etc., or who voluntarily delivers such up to any pirate, is guilty of piracy. Any one who conveys or removes any person as a slave is also by statute law of most civilized nations guilty of piracy. The penalty is death, or some lesser punishment. The most famous execution of pirates was on the beach at Newport, Rhode Island, in the colonial period, when 30 pirates from one vessel were hanged at one time.

**Pirai**, or **Piraya**, a voracious fresh-water fish of tropical America. It is three or four feet in length, and its jaws are armed with sharp lancet-shaped teeth, from which cattle when fording rivers sometimes suffer terribly.

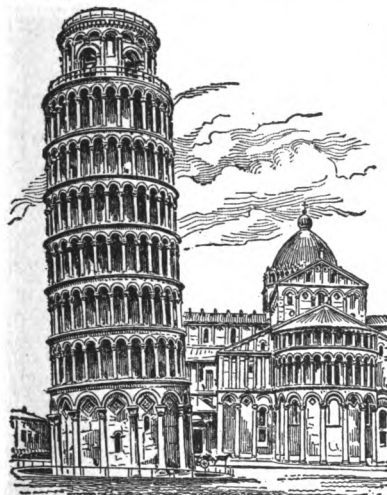
**Pisa**, a city of Central Italy, capital of the province of Pisa, on the Arno, 8 miles from its mouth, 13 miles N. E. of Leghorn, and 50 miles W. of Lucca. The walls are 5 miles in circuit. The Arno flows through the city, and is crossed by several bridges, the principal one being of fine marble. The cathedral, with its attendant buildings, the baptistery, the cemetery and the belfry, is perhaps, the finest specimen that exists of the style of building called by the Italians the *Gotico-Moresco*. The most remarkable buildings in Pisa are the Campo Santo and the belfry, or *campanile*, a cylindrical tower, 178 feet in height, constructed of successive rows of pillars, chiefly of marble; it is extremely graceful in its proportions, but its chief peculiarity consists in its inclination about 13 feet out of the perpendicular, whence it is commonly called the *Leaning Tower of Pisa*. The University of Pisa is one of the oldest in Italy, founded in 1338. In 1914 it had 50 professors and 993 students. Galileo was formerly one of the professors. Pop. (1921) 71,000.

**Pisa, Council of**, a church council generally included in those called ecumenical, met and opened in Pisa March 25, 1409, and the 23d and last session of which was held Aug. 7 following. Its aim was to end the schism which had divided the Western Church for 30 years; and with this view the leading cardinals, finding that neither of the rival Popes, Gregory XII. and Benedict XIII., would keep their promises to abdicate, had set aside the claims of both, and themselves convoked a general council. It was attended from first to last by 24 cardinals, 4 patriarchs, 80 bishops, 102 proctors of bishops, 87 abbots, 200 delegates of abbots, besides many generals of orders, doctors, deputies of universities, and ambassadors. After the rival Popes failed to appear in obedience to its summons, the council formally tried the claims of both in turn, and deposed them as schismatics and heretics. The cardinals then formed themselves into conclave and elected Cardinal Philargi, who assumed the name of Alexander V. But the council, instead of getting rid of the contending Popes, had only added a third, and the Church of Rome

continued to be distracted for eight years longer, down to the time of the Council of Constance.

**Pisces**, in astronomy, the 12th and last of the zodiacal constellations.

**Pisgah**, a name that seems to have applied generally to the mountain range or district to the E. of the Lower Jordan, identical with, or itself a part of, the mountains of Abarrim, one of the summits of which is Mount Nebo (the modern Neba), 2,644 feet above the level of the Mediterranean. From this point Moses enjoyed his glimpse of the Promised Land, in early spring.



PISA: LEANING TOWER AND CATHEDRAL

**Pisistratus**, a citizen of Athens who raised himself to the sovereign authority in the time of Solon (to whom he was related) 560 B. C. He was a beneficent ruler, and did much to promote the rise of Greek literature. We owe to him the poems of Homer in their present form, Pisistratus having collected them, as they were scattered in detached parts throughout Greece, and given them orderly arrangement.

**Pisquow**, or **Pishquitpah**, a tribe of North American Indians living for-

merly on the Wenatchee or Pisquow river, Washington. The name has also been used collectively and applied to the Methow and other tribes in Okanogan county of that State. They are now on the Yakima reservation, Washington.

**Pistacio Nut**, the fruit of the pistacia vera. The kernel is very oily, of a peculiar flavor and bright green in color, and is much used in confections, etc.

**Pistole**, a gold coin once current in Spain, France, and the neighboring countries; and its average value was about \$3.85.

**Pita Flax**, flax made from the fiber of the maguey and used for twine, rope, hammock meshes, etc. In Mexico it is also used for oakum. La-billardiere found that its strength is to that of common flax as 7 to 11%.

**Pitaval**, **Francois Gayot de**, a French lawyer; compiler of the famous collection of "Celebrated Cases"; born in 1673, served in the army, but became an advocate, and was known as an industrious and painstaking compiler. Of his great work there have been numerous abridgments, continuations, and translations; and his name has become so identified with the collecting of criminal cases that a similar work, published by various editors in Leipsic in 1843 and succeeding years, was called "A New Pitaval." He died in 1743.

**Pitcairn Island**, a solitary island in the Pacific Ocean, between Australia and South America, in lat. 25° 3' S. and lon. 130° 8' W., measures 2½ miles by 1 mile. In 1790 it was taken possession of by nine of the mutineers of H. M. S. "Bounty," with six Tahitian men and 12 women, the ringleader being called Christian. According to one account, the white men and the Tahitians murdered each other at intervals, till at the end of 10 years John Adams was left alone, with eight or nine women and several children; and from them the present inhabitants of the island are descended. Adams, changed by these tragic adventures, and sobered by his responsibilities, set about the education of his companions in Christian principles. The little colony was unknown to the world till 1808, when it

was "discovered" by Captain Folger of the American sealing ship "Topaz"; the first British vessel to visit it did not arrive till 1814. The island was annexed to Great Britain in 1839. Nearly 200 of the islanders were transferred to Norfolk Island in 1856, but a number of them afterward returned. Pitcairn Island enjoys a lovely climate; its mountainous surface reaches 1,008 feet in Outlook Ridge; the soil is fertile, and produces yams, coconuts, bread fruit, sweet potatoes, bananas, etc. The people bear a high character for virtue, contentedness and uprightness, and choose their own pastor and magistrate.

**Pitch**, a term applied to a variety of resinous substances of a dark color and brilliant luster, obtained from the various kinds of tar produced in the destructive distillation of wood, coal, etc. Pitch is extensively used in ship-building for closing seams, also for coating and preserving wood and iron.

**Pitchblende**, or **Uraninite**. See **RADIUM**.

**Pitcher Plant**. The name is applied to any plant with a pitcher-like appendage. The California pitcher plant is well known in that region.

**Pitch Stone**, a vitreous rock of pitch-like luster and imperfect conchoidal fracture; brittle. Analyses indicate that it is probably a vitreous form of quartz, felsite, or of trachyte.

**Pithom**, one of the store cities which the children of Israel built for Pharaoh (Exod. i: 11), conclusively identified in 1883 by the excavations of M. Naville with the deserted Arab village Tell El-Maskhuta, on the freshwater canal and railway line from Cairo to Ismailia, about half-way between Ismailia and Tell El-Kebir.

**Pitman, Benn**, an American phonographer; born in Trowbridge, England, July 24, 1822; brother of Sir Isaac Pitman, the inventor of phonography; was educated in his brother's academy; lectured and taught phonography throughout Great Britain for 10 years. He came to the United States in 1853, and founded the Phonographic Institute in Cincinnati; invented the electro-process of relief engraving; was military recorder of State trials in the Civil War. D. 1910.

**Pitman, Sir Isaac**, an English stenographer; born in Trowbridge,

England, Jan. 4, 1813. He was the inventor of the phonetic system of shorthand writing and published his first treatise on the subject entitled "Stenographic Soundhand" in 1837. He was the head of the Phonetic Institute at Bath, and was identified with the spelling reform. He died Jan. 22, 1897.

**Pitt, William**, an English statesman; born in Hayes, England, May 28, 1759; was educated at Cambridge University; studied law and was elected to Parliament in 1780. In 1783 he became prime minister; was active in the negotiations of peace with the United States, and was instrumental in the passage of many important measures. He died in Putney, England, Jan. 23, 1806. For the elder Pitt see Chatham.

**Pittsburg** (according to its city charter, Pittsburgh), a city, port of entry, and county-seat of Allegheny co., Pa.; at the confluence of the Monongahela and Allegheny rivers, 353 miles W. of Philadelphia; pop. (1920) 588,343; (1930) 669,817.

The main part of the city is on a peninsula formed by the junction of the two rivers; a smaller part on the S. bank of the Monongahela and Ohio; and the business part on the level tongue of the peninsula. The streets, laid out irregularly, have a total length of over 1,050 miles, more than half being improved. There are over 1,000 acres in the park system, the most noteworthy reservation being Scheuley Park, in which are the Carnegie Institute, the Carnegie Technical Schools, the Music Hall and Museum, the Conservatory and Hall of Botany, and several statues. Grant and Beechwood boulevards connect the downtown district, parks and cemeteries with each other.

The other principal buildings are the Allegheny County Courthouse, the City Hall, the U. S. Government Building, the U. S. Arsenal, the State Penitentiary, the Exposition Building, and the Blockhouse, an interesting remnant of old Fort Pitt, from which the city was named. There are over 400 churches, 22 hospitals, 62 asylums and infirmaries, 134 public elementary and 7 high schools, 96 Kindergartens, 4 institutions of collegiate grade, and several seminaries.



Pittsburg is one of the world's most noted manufacturing cities, both because of the variety and the extent of its industrial activities, and has been well christened "the Smoky City." The iron and steel and the glass plants predominate. In 1925 it was estimated that there were in the city of Pittsburg over fifteen hundred manufacturing plants employing \$1,320,500,000 capital and 315,900 wage earners, paying \$411,430,000 wages, and yielding products having a combined value of \$1,875,000,000.

The chief product of this city is steel, and there are many rolling mills and foundries in the city proper and the suburbs. There are also a considerable number of glass works and machine shops. Pittsburg leads the world in the production of steel and steel products, but is closely rivaled by the Gary, Ind., mills.

The city is in the Federal Reserve district No. 4, of which Cleveland, Ohio, is the central reserve city.

In 1754, at the suggestion of George Washington, the English began to erect a blockhouse on the present site of the city. They were driven away by the French, who built a fort at the junction of the two rivers and named it Du Quesne. In 1758, after two unsuccessful attempts to retake the place, the English under General Forbes, made a third attempt, and the French burned and evacuated the fort. In the following year another fort was erected here, named in honor of William Pitt. The British withdrew from the post in 1772, and it was held by Virginia in 1775-79. The place was incorporated as a city March 18, 1816. In 1877 and 1892 the city suffered severely from great industrial strikes, and on Dec. 9, 1907, the Greater Pittsburg was constituted by the annexation of Allegheny City.

**Pittsfield**, city and capital of Berkshire county, Mass.; on the Housatonic river and the Boston & Maine and other railroads; 40 miles N. W. of Springfield; is chiefly engaged in the manufacture of cotton, woolen, and knit goods, electrical apparatus, flour, silk, and shoes; contains a beautiful white marble Court House, Berkshire Athenæum, with Historical Society, Public Library, and Museum and Art Gallery, St. Jo-

seph's Cathedral (R. C.), Bishop Training School for Nurses, headquarters of the Agassiz Association, House of Mercy, and a public park with statue of "The Color Bearer." Pop. (1930) 49,677.

**Pius**, the name of a number of Popes, as follows:

Pius I., succeeded Hyginus in 142, and died in 157.

Pius II. (Aeneas Sylvani Piccolomini); born in Tuscany in 1405, was chosen to succeed Calixtus III. in 1458, and died in 1464.

Pius V. (Michele Ghislieri); born in Piedmont in 1504, and early entered the Dominican order. He so distinguished himself by his austere life, and his zeal against "heretics," that he was appointed inquisitor in Lombardy, and afterward inquisitor-general. He was created cardinal in 1557, and was chosen to succeed Pius IV., in 1566. He died in May, 1572.

Pius VI. (Giovanni Angelo Braschi); born in Cesena in 1717, and succeeded Clement XIV. in 1775. His first act was to make a reform in the public treasury; he then completed the museum in the Vatican; but the greatest work of his pontificate was the draining of the Pontine marshes. Basseville was sent as envoy from the republic of France to Rome, where he behaved with so much insolence, that the people assassinated him in 1793. General Duphot entered the city with his troops to restore order, but the papal soldiers routed them, and Duphot was slain. On this Bonaparte entered Italy, and made the Pope prisoner in the capitol, which was plundered. The venerable pontiff was carried away by the victors, and hurried over the Alps to Valence, where he died Aug. 29, 1799.

Pius VII. (Gregorio Barnaba Chiaramonti); born in Cesena, in 1742; became a Benedictine monk; was created cardinal in 1785, and after the death of Pius VI., was chosen, after long deliberations of the conclave, to succeed him March, 1800. In 1804 the Pope went to Paris and crowned Napoleon emperor, returning to Rome in May, 1805. Soon after Ancona was seized by the French, and the great quarrel between Napoleon and the Pope began. Pius was arrested by the French officer Miollis



and sent to Savona, and afterward to Fontainebleau, whence he was not permitted to return to Italy till January, 1814. The Congress of Vienna restored the States of the Church to the Pope, who applied himself thenceforth to internal reforms. He re-established the Jesuits and the Inquisition. He died, Aug. 20, 1823.

Pius VIII. (Cardinal Castiglione), became Pope in succession to Leo XII., in 1829. After a short pontificate of one year, he died in 1830.

Pius IX. (Giovanni Mario Mastai Ferretti); born in Singaglia, May 13, 1790; was intended for the army, but resolved to devote himself to the Church. He was nominated by Pius VII. on a mission to the government of Chile, and immediately on his return to Rome he was appointed by Leo XII. to one of the most important of the ecclesiastico-civil departments of administration. In 1840 he was created Cardinal-Archbishop of Imola, in the Romagna. Pope Gregory XVI. died June 1, 1846, and Cardinal Ferretti was elected to the papacy under the name of Pius IX., June 16. But the French Revolution of 1848 gave a much more powerful impulse to the enthusiasm of the Italian patriots. These sweeping changes the Pope was not prepared to support, and from that moment his popularity began to decline. The popular disaffection was greatly increased on his taking for his minister Count Rossi, one of the most aristocratic and unpopular men in Rome. Count Rossi was assassinated Nov. 15, and Pius himself, a few days later, escaped from Rome in disguise, and arrived safely in Gaeta, the first town in the Neapolitan territory, whither he was followed by the members of the papal court and the diplomatic corps. The Pope remained nearly a year and a half at Gaeta and Portici. During his absence, Rome, which was in the possession of the native troops under Garibaldi, was besieged, and at last taken by storm by the French army under General Oudinot, after sustaining some reverses. The Pope left Portici, April 4, 1850, escorted by Neapolitan and French dragoons, and accompanied by the King of Naples and several members of his family. He crossed the frontier at Terracina, April 6, and re-entered Rome April 12, amid the

thunder of French cannon. His chief ecclesiastical acts are the formal definition of the dogma of the Immaculate Conception, in December, 1854; and the bull summoning the Ecumenical Council of 1869-1870, which promulgated the doctrine of papal infallibility. In September, 1870, the French troops were withdrawn from Rome, and in October the States of the Church were annexed to the kingdom of Italy, thus ending the temporal power of the Popes. He died Feb. 7, 1878.

Pius X., Pope of Rome in 1903-14, family name Giuseppe Sarto (in English, Joseph Taylor), was an Italian, a native of Treviso, where he was born in 1835. It is a curious coincidence that in 1303, exactly six hundred years before, another native of Treviso was elected Pope. The Sarto family consisted of two boys and six girls. Giuseppe was the younger brother. The family was poor, and to this day all the members are in humble life. The late Pope's elder brother held a small office under the Government, for which he received a salary of eighty dollars a year. Two of his sisters, being unmarried, came to reside with their distinguished brother. He performed the duties of a humble parish priest until 1884, when Pope Leo made him Bishop of Mantua, and, nine years later, he was made a Cardinal and Patriarch of Venice. He took no part in the political affairs of the Church, and seldom went to Rome, but devoted himself to his own diocese, where he won the respect of Protestants, as well as Catholics, by his charities, his interest in social reforms, and his kindness and courtesy. It is stated that he was so generous in his gifts to the poor of his diocese, that he impoverished himself to such a degree that he had been known to pawn his official ring, to provide himself with funds for a temporary emergency. It was noticed after his election to the Pontificate, by a Cardinal who was making an appointment with him, that he was wearing a nickel watch, with a common silk guard. He decided to be called Pius X., but the inferences usually drawn from the choice of a name are at fault in this instance, as it is not known which of his nine predecessors of that name he regarded as his model.

He was a man of profound learning and sterling honesty of character. Americans who met him said that he bore a striking resemblance to the late Phillips Brooks. He was elected Pope on Aug. 4, 1903; died Aug. 20, 1914; and was succeeded by Cardinal Giacomo della Chiesa, who assumed the title of BENEDICT XV. (q. v.), on Sept. 3, 1914, and eagerly strove for peace during the World War.

**Pius XI.** (1858- ). The present pope, the 261st occupant of the Papal chair, was born October 12, 1858, of Italian parentage. He was ordained a priest when twenty-three years of age, and became librarian of the Ambrosian library at Milan, and later for the Vatican library. In this latter position he served many years, leaving it to become papal nuncio in Poland after the organization of that republic in 1918. His services there were noteworthy and gained for him the confidence of the Pope, who appointed him to the archbishopric of Milan. He was made a cardinal on June 16, 1921, by Benedict XV, and was elected pope on February 6, 1922.

In July, 1929, he succeeded in bringing about a reconciliation between the government of Italy and the Vatican, and for the first time in sixty years a Pope left the self-imposed imprisonment in the grounds of the Vatican. The occasion was attended with much pomp and ceremony, in which all the princes of the church took part. Mussolini, Dictator of Italy, is held to be equally responsible for the change.

**Pizarro, Francisco**, a Spanish explorer, the conqueror of Peru. He embarked in 1510, with some other adventurers, for America; and, in 1524, he associated at Panama with Diego de Almagro and Hernandez Lucque, a priest, in an enterprise to make fresh discoveries. In this voyage they reached the coast of Peru. Pizarro was murdered by Almagro's followers, June 26, 1541.

**Pizarro, Gonzalo**, half brother of the preceding; born in 1502. His brother appointed him governor of Quito in 1540.

**Plague**, a peculiarly malignant fever of the continued and contagious type, now believed to be almost identical with the worst kinds of typhus fever. The plague seems to have

been the black death of the 14th century. It was known by the name of plague when, in 1665, it slew in London 68,596 people, about one-third of the population.

In the summer of 1896 a very malignant form of disease, known as the "bubonic" plague, made its appearance in Bombay, India, and spread with great rapidity. The bubonic plague receives its name from the fact that it attacks the lymphatic glands in the neck, armpits, groin, and other parts of the body. In general, the disease is spread in the same manner as cholera, except that the cholera germ must enter the intestinal tract, while the germ of the plague may attack any part of the mucous membrane, or be admitted by even the minutest abrasion of the skin. But while this germ is so virile and so easily taken into the system, it is one of the most easily killed by disinfection.

The Ten Plagues of Egypt were 10 inflictions divinely sent upon the Egyptians to compel them to emancipate the Israelites from bondage and allow them to quit the land. The first plague consisted in the turning of the waters of Egypt into blood; the second, of frogs that covered the land; the third, of lice annoying both man and beast; the fourth of grievous swarms of flies; the fifth, of murrain that attacked the live stock; the sixth, of boils "breaking forth with blains upon man and upon beast"; the seventh, a severe thunder storm accompanied by destructive hail; the eighth, a plague of locusts that ate what the hail had spared; the ninth, a darkness that could be felt; the tenth, the death of the firstborn of man and beast among the Egyptians.

**Plain**, an expanse of low-lying territory as distinguished from a tableland or plateau. Speaking broadly, the Western Hemisphere is the region of plains, and the Eastern of tablelands. Nevertheless, the former has in it what is called the Great Northern plain, extending, with the one break in the Ural Mountains, from the shores of the Atlantic nearly to Bering's Strait, and from the Arctic Ocean to the Caucasus and Altai Mountains. In this hemisphere are the Great Central and the Atlantic plains

of North America, and the great South American plain. "The Plains" was a vast stretch of country of the United States which emigrants crossed in going to the Pacific, now divided into prosperous States.

**Plainfield**, a city in Union county, N. J.; on the Central Railroad of New Jersey and a continuation of the Orange Mountains; 24 miles W. by S. of New York city; has manufactories of printing presses, safes, clothing, hats, and machinery; and contains Muhlenberg hospital, and public library. Pop. (1930) 34,422.

**Planetarium**, a dome-like room, upon the ceiling of which is pictured an artificial universe, showing the way in which the planets move around the fixed stars.

**Plane Tree**. Tall trees with ponderous trunks, the bark of which peels off annually, leaving the surface smooth and bare. American plane tree has less deeply divided and indented leaves than the plane tree of Western Asia and Cashmere, and no membranous bracts along the female flowers. On the banks of the Ohio and the Mississippi there are trees 10 to 16 feet in diameter. Called in the U.S. also, buttonwood and water beech.

**Planet**, a heavenly body which, to old-time observers, seemed to wander about aimlessly in the sky. Subsequently it was discovered that the seemingly erratic bodies were as regular in their movements as the others, revolving, like the earth, around the sun. Shining only with reflected light, they gleam with a steady radiance in place of twinkling like the fixed stars.

**Planetoids**, or **Asteroids**, a group of small planets, about 500 in number, which have orbits between Mars and Jupiter. The largest one has a diameter of about 100 miles. It is supposed that these planetoids are pieces of the sun which failed to be collected by the growing planets during the formative stages of the solar system. As a consequence some of them are angular, having cooled off by themselves without sufficient gravity to pull themselves into spheres.

**Plank Fort**, or **Fort Plank**, a Revolutionary fort in Montgomery Co., N. Y., 2 miles N. W. of Fort Plain.

**Plantagenets**, the surname of a line of English kings of French origin on the paternal side—Henry II. of England, the first of the line, ascended the English throne in 1154, and his descendants reigned during 331 years, the last monarch of the line being Richard III., who fell at the battle of Bosworth, in 1485. In the 14th century the line became divided into two great rival factions, those of York and of Lancaster, known as the parties of the Red and White Rose.

**Plantain**, a small tree closely akin to the banana, from which it differs in not having purple spots on its stem. The fruit also is larger and more angular. It is very delicious and is thoroughly wholesome. The name plantain is also applied to a common weed, the seeds of which are used as food for birds.

**Plantain Eaters**, a family of Pie-like birds, of African distribution, arboreal habits, and vegetarian diet.

**Plantation**, a term formerly used to designate a colony. The term was latterly applied to an estate in the Southern States, the West Indies, etc., cultivated chiefly by negroes. The term planter is applied to the owner of a plantation.

**Plantin, Christophe**, a French printer; born in St. Avertin, near Tours, in 1514, and settled as a book-binder at Antwerp in 1549; some six years later he began to print. The most noted of all his publications is the "Biblia Polyglotta." Plantin's editions of the Bible in Latin, Hebrew, and Dutch, and editions of the Greek and Latin classics, are scarcely less celebrated. He set up printing establishments in Leyden and Paris, and these, with that in Antwerp, were carried on by the husbands of his daughters. His office in Antwerp remained in the possession of the descendants of John Moretus, his son-in-law, till it was bought by the city in 1876 for \$240,000; out of it was created the "Musée Plantin." Plantin died in Antwerp, July 1, 1589.

**Plaster**, calcined gypsum or sulphate of lime, used, when mixed with water, for finishing walls, molds, etc.

**Plaster of Paris**, the name given to gypsum when ground and used for taking casts, etc.

**Plata, Rio de la**, River of Silver; a body of water which extends for more than 200 miles between the Argentine Republic and Uruguay, and is not, strictly speaking, a river, but rather an estuary, formed by the junction of the great rivers Parana and Uruguay. It flows into the Atlantic between Cape St. Antonio and Cape St. Mary, and has here a width of 170 miles. It was discovered in 1515 by Juan Díaz de Solís, and called Dio de Solís; it owes its present name to the famous navigator Cabot.

**Plating**, the act, art, or process of covering articles with a thin coating of metal; especially the art of covering baser metals with a thin coating of gold or silver.

**Platinum**, a tetrad metallic element discovered first in the United States; and still largely produced there, also found in the Ural chain, and in copper ore from the Alps. Pure forged platinum takes a high luster, is nearly as white as silver, and very ductile and malleable. It resists the strongest heat of the forge fire, but can be fused by the electric current; is the heaviest known substance excepting osmium and iridium, is unalterable in the air, dissolves slowly in nitromuriatic acid, but is not attacked by any single acid.

**Plato**, a Greek philosopher; born in Athens or in Ægina, in May, 429 B. C., the year in which Pericles died. He was a disciple of Socrates, and after the death of that philosopher Plato himself became a teacher in the plane tree grove of the Academia. He had a great number of disciples, many of whom became eminent teachers. Among them was Aristotle, distinguished as the "Mind of the School," and perhaps Demosthenes. Women are said to have attended. In his 40th year, Plato visited Sicily, but he offended the tyrant Dionysius by the political opinions he uttered, and only escaped death through the influence of his friend, Dion. Two later visits to the court of the younger Dionysius were the only interruptions to his calm life as a teacher and writer at Athens. He died in the act of writing, it is said, in May, 347 B. C.

**Platoff, Matvei Ivanovich**, Count, a Russian general; born in Azov, Russia, Aug. 17, 1757. He

served in the Turkish campaign of 1770-1771; he took part in the campaigns against the French, 1805-1807. He was enthusiastically welcomed, and presented with a sword of honor on the occasion of his visit to London in company with Blücher. After the war he retired to his own country, and died near Tcherkask, Jan. 15, 1818.

**Platonic Love**, an affection subsisting between two persons of different sex, which is presumed to be unaccompanied by any sensuous emotions, and to be based on moral or intellectual affinities. The expression has originated in the view of Plato, who held that the common sexual love of the race, harassed and afflicted with fleshly longings, is only a subordinate form of that perfect and ideal love of truth which the soul should cultivate.

**Platt, Thomas Collier**, an American legislator; born in Owego, N. Y., July 15, 1833; was a member of the class of 1853 of Yale College, but was compelled to give up on account of ill health; received the honorary degree of M. A. from that college in 1876; entered mercantile life soon after leaving school; was county clerk of the county of Tioga in 1859, 1860 and 1861; was elected to the 43d and 44th Congresses; was elected United States Senator Jan. 18, 1881, and resigned that office May 16 of the same year, with Roscoe Conkling, both Senators being offended because President Garfield made New York appointments without consulting them; was chosen secretary and director of the United States Express Co. in 1879, and in 1880 was elected president of the company; was member and president of the board of quarantine commissioners of New York from 1880 till 1888; was delegate to the National Republican convention of 1876, 1880, 1884, 1888, 1892 and 1896; was president of the Southern Central railroad; was a member of the National Republican committee; and was elected United States Senator in 1896, and re-elected in 1903. Senator Platt has been married twice. His first wife died Feb. 13, 1901, and he was married to Mrs. Lillian T. Janeway, of Washington, widow of Dr. Theodore Janeway. Died March 6, 1910.

**Platte**, a river in the United States, which rises in the Rocky Mountains

by two branches, called respectively the North and South Forks of the Platte. The united stream falls into the Missouri after a course of about 1,600 miles.

**Playfair, Sir Lyon**, a British scientist; son of Dr. G. Playfair, inspector-general of hospitals in Bengal; born in Meerut, Bengal, May 21, 1819. His able reports on the sanitary condition of the large towns of Great Britain brought him prominently before the public. He held several prominent appointments under Liberal governments. He died May 29, 1898.

**Pleasanton, Alfred**, an American military officer; born in Washington, D. C., June 7, 1824; died there Feb. 17, 1897. He served with distinction in the Mexican, the Sioux, and the Civil Wars.

**Plebeians, or Plebs**, in ancient Rome, one of the great orders of the Roman people. The whole government of the state, with the enjoyment of all its offices, belonged to the patricians, with whom the plebeians could not even intermarry. The civil history of Rome is composed of the struggles of the plebeians to claim a place in the commonwealth, to which they were entitled. It met with success when (286 B. C.) the Lex Hortensia gave the enactments passed at the plebeian assemblies, the force of law.

**Plehve, Wenceslas Konstantinovich, von**, a Russian Minister of the Interior; born in Poland in 1838; the son of a poor noble. He studied law in Moscow, became assistant-procurator, and later was appointed Imperial Counsel of the Courts of Warsaw. Fearless, and sincere in his belief that the sternest methods were the best means of governing the mixed Russian masses, his suppression of all attempts at liberal reform, while winning the applause of the Russians, gained him the hatred of the Poles, Finns, and Jews. He was assassinated by a bomb thrown at his carriage, July 28, 1904.

**Pleiades, or Pleiads**, a group of stars in the constellation Taurus, the Bull. The stars are so close together that it is difficult to say how many are seen by the naked eye.

**Plesiosaurus**, the typical group of the order Plesiosauria, extinct am-

phibian animals. Its organization would fit it for swimming on or near the surface, and the length and flexibility of its neck would be eminently serviceable in capturing its prey.

**Pleura**, in anatomy, plural, serous membranes forming two shut sacs, each possessed of a visceral and a parietal portion. The former covers the lungs, and the latter the ribs, the intercostal spaces, etc.

**Pleurisy**, inflammation of the pleura, going on to exudation, fluid effusion, absorption, and adhesion.

**Pleuro-pneumonia**, pneumonia with bronchitis, the former constituting the chief disease.

**Plevna**, a town of Bulgaria on the Vid, an affluent of the Danube, 85 miles N. E. of Sofia. It is noted for the desperate resistance of its Turkish garrison under Osman Pasha, from July to Dec. 1877, during the Russo-Turkish War. Pop. (1922) 27,779.

**Pleyel, Ignaz**, composer; born near Vienna, Austria, in 1757; died at Paris, 1831. He studied under Haydn, and rapidly acquired a European reputation. His works, chiefly instrumental, are pleasing and expressive.

**Plimsoll, Samuel**, "the sailor's friend," an English legislator; born in Bristol, England, Feb. 10, 1824. In 1854 he started business in the coal trade in London, and shortly afterward began to interest himself in the sailors of the mercantile marine, and the dangers to which they were exposed, especially through overloading, and the employment of unseaworthy ships. He entered Parliament in 1868, and succeeded in getting passed the Merchant Shipping Act in 1876. In 1890 the fixing of the load line was taken out of the owner's discretion and made a duty of the Board of Trade. Mr. Plimsoll retired from parliamentary life in 1880. Died June 3, 1898.

**Pliny, the Elder** (Caius Plinius Secundus), one of the most celebrated writers of ancient Rome; born in Verona or Como A. D. 23, served in the army of Germany, afterward became an advocate, and was ultimately procurator in Spain. Being at Misenum with a fleet, which he commanded, on the 24th of August, A. D., 79, his sister desired him to observe a remarkable cloud that had just appeared. Pliny



discovered that it proceeded from Mount Vesuvius, ordered his galleys to sea, to assist the inhabitants on the coast, while he himself steered as near as possible to the foot of the mountain. Pliny and his companions landed at Stabiae, but were obliged to leave the town for the fields, where the danger was equally great, from the shower of fire which fell on them. In this state they made their way to the shore, but Pliny fell down dead, suffocated probably by the noxious vapors. The eruption which caused his death was that in which the cities of Herculaneum and Pompeii were destroyed. His name and fame are preserved by his great work entitled "Natural History," in 37 books, one of the most precious monuments of antiquity extant. It is a laborious compilation, from almost innumerable sources.

**Pliny, the Younger** (Caius Plinius Caecilius Secundus), nephew of the preceding; born in Como A. D. 62. In his 18th year he began to plead in the forum; he went as military tribune to Syria. He was promoted to the consular dignity by Trajan. He was afterward made proconsul of Bithynia, from whence he wrote to Trajan his well-known account of the Christians, and their manner of worship. The "Epistles of Pliny" are agreeably written, and very instructive, and have been translated into English. He died after 112.

**Plock, or Plotsk**, a town of Rep. of Poland in the cathedral of which are located the tombs of Polish kings of the 11th and 12th centuries.

**Plum**, the fruit of various trees of the genus *Prunus*. It is a native of Asia Minor, whence it was introduced into Europe at an early period, and later into America. There are about a dozen species, differing in size, form, color, and taste.

**Plumed Knight**, a name given to James G. Blaine, and originating in a speech made by Col. Robert G. Ingersoll, in nominating Mr. Blaine for the presidency.

**Plush**, a shaggy pile cloth of various materials. An unshorn velvet of cotton, silk, or mixed fiber, sometimes of a silk nap and cotton back. It has two warps, one of which is brought to the surface to make the

nap.

**Plutarch**, a Greek biographer and moralist, a native of Cheronea, in Boeotia. In A. D. 66 he was a pupil of the philosopher Ammonius at Delphi. He visited Italy, and spent some time at Rome, lecturing there on philosophy as early as the reign of Domitian; but his name is not mentioned by any of the eminent Roman writers, his contemporaries. He returned to his native town, where he held various magistracies, and was appointed priest of Apollo. He was still living in 120, but the time of his death is not known. His great work is entitled "Parallel Lives," and consists of biographies of 46 eminent Greeks and Romans, arranged in pairs, each pair accompanied by a comparison of characters.

**Pluto**, in mythology, the son of Saturn and Ops, inherited his father's kingdom with his brothers, Jupiter and Neptune. He received as his share the infernal regions. All the goddesses refused to marry him; but, on seeing Proserpine, the daughter of Ceres, he became enamored of her, and carried her away. Black victims, and particularly a bull, were the only sacrifices offered to him. The dog Cerberus watched at his feet, the harpies hovered around him, Proserpine sat on his left, and the Parcae occupied his right hand.

**Pluto**, the ninth major planet and the most remote of any yet discovered. The mathematical presence of this trans-Neptunian planet was computed first by Professor Percival Lowell but not until Mar. 13, 1930, was it actually photographed. The detection was made by Clyde W. Tombaugh at Lowell Observatory, Flagstaff, Arizona. It is estimated to be forty-five times more distant from the sun than the earth and to be 1,500 times the size of the earth, also to be so cold as to congeal all matter at least to a plastic state. According to its orbit, Pluto was expected to pass from vision in a few years from its discovery not to return until 5000 A. D.

**Plutus**, in Greek mythology, the god of riches. He was represented as blind, because he distributed riches indiscriminately; he was lame, because he came slowly and gradually; and he

## Plymouth

had wings, to intimate that he flew away with more velocity than he approached mankind.

**Plymouth, a town and county-seat** of Plymouth co., Mass.; on Plymouth Bay, 37 miles S. E. of Boston. Plymouth is of importance as the spot where the Pilgrim Fathers landed on Dec. 21, 1620. A portion of the rock on which they first stepped has been placed in front of Pilgrim Hall, in which are preserved old books, paintings, pictures, and other valuable relics. The rock itself is in Water Street, and is covered by a handsome granite canopy. Plymouth also has the National monument, 81 feet high, erected to the Pilgrims at a cost of \$200,000, and dedicated in 1889. Pop. (1930) 13,042.



PLYMOUTH ROCK.

**Plymouth, a town and county-seat** of Washington co., N. C.; on a small creek, a few miles S. of the Roanoke river, where it enters Albemarle Sound; 105 miles E. of Raleigh. It fell into the hands of the Federal troops early in 1862, and was taken in April, 1864, by the Confederates with the aid of the iron-clad ram "Albemarle." The "Albemarle" was blown up with a torpedo by Lieut. W. B. Cushing on Oct. 27, and on Oct. 31 Plymouth was reoccupied.

**Plymouth, a borough** in Luzerne county, Pa.; on the Susquehanna river and the Delaware, Lackawanna & Western railroad; 4 miles W. of Wilkesbarre; is in the Wyoming Valley; has large coal mines nearby; and contains collieries, hosiery mills, and manufacturing of mining machinery. Pop. (1930) 16,543.

**Plymouth, a seaport, municipal**

## Pneumonia

and parliamentary borough of England in Devonshire, at the head of Plymouth Sound, between the estuaries of the Plym and Tamar. Its chief importance lies in its position as a naval station. To secure safe anchorage in the sound a stupendous breakwater has been constructed at a cost of about \$10,000,000. The Western Harbor is devoted to the navy. Pop. (1926 Est.) 187,300.

**Plymouth Brethren, a body** which arose almost simultaneously in Dublin and Plymouth, about 1830, and, as they called themselves "The Brethren," outsiders came to know them as "Plymouth Brethren" from the town where they had fixed their headquarters. Their communities are of what is known as the Evangelical Calvinistic type. They baptize all adults, whether previously baptized or not, and observe the Sacrament of the Lord's Supper weekly. There are four bodies in the United States, with 10,566 members.

**Pneumatic Dispatch, propulsion** by means of compressed air or by forming a vacuum. Propulsion by compressed air has of recent years been successfully applied to a variety of practical uses. Parcels are thus conveyed, and internal communication in warehouses, hotels, etc., is carried on by its means. New York, Philadelphia, and other American cities use a pneumatic mail dispatching system. The pneumatic dispatch plant connected with the Philadelphia postoffice is in many respects the most complete plant of the sort in the world. It has been in use since Feb. 17, 1893. In the annual report of the Postmaster-General to Congress for 1901, he advocated the increased use of the pneumatic dispatch service throughout the United States. See ATMOSPHERIC RAILWAY.

**Pneumatic Gun, a gun** operated by compressed air. The firing is done by pulling a lanyard.

**Pneumatics, the science** which treats of the mechanical properties of air and other gases, investigating their weight, pressure, elasticity, condensation, etc. Air being a vehicle of sound, pneumatics includes also the science of acoustics.

**Pneumonia, inflammation** of the lung, usually caused by exposure to

cold or wet, a cold draught or chill after being overheated, injury to the chest, irritation, or as a secondary affection in smallpox, typhoid or puerperal fever, and other low wasting diseases.

**Po**, the largest river of Italy, rises on Monte Viso, one of the Cottian Alps, at an altitude of 6,405 feet, close to the French frontier. It has an entire length of 360 miles, and drains an area of nearly 28,900 square miles. Below Piacenza its stream has from ante-Roman days been artificially embanked along great stretches with double lines of embankments on each side.

**Poaching**, the trespassing on another's property for the purpose of killing or stealing game or fish. While nearly every State, if not every one, has game laws, they are enacted in the public interest, and bear no similarity to the game laws of Great Britain, which are feudal in their character, and intended to reserve for the wealthy alone the recreations of hunting and fishing. Poaching in the English sense is unknown in America. In England when a person's land adjoins a stream where there is no ebb and flow that person is assumed to have an exclusive right to fish in the stream as far as his land extends, and up to the middle of the stream; and so also when a person's land incloses a pond, the fish in that pond belong to him. Where several properties are contiguous to the same lake the right of fishing in that lake belongs to the proprietors, in proportion to the value of their respective titles. Exclusive right of fishing in a public river, that is, one in which there is ebb and flow up to the tidal limit, or a portion of the sea, is held by some proprietors by virtue of royal franchises granted prior to the Magna Charta.

**Pocahontas**, daughter of Powhatan, a powerful Indian chief of Virginia; born about 1595. She displayed a friendliness toward the British colonists, first at 12 years of age, in saving the life of Capt. John Smith, who had been captured and condemned to death by her father, and on several occasions making known to the English their danger when about to be attacked. In 1612, while on a visit

to a neighboring tribe, she was seized, and held as a hostage by the English, as a safeguard against the hostility of her tribe. While on shipboard she became acquainted with, and married John Rolfe, an Englishman, who took her to England, where, in 1616, she was presented at court. She had one son, from whom numerous wealthy families of Virginia claim descent. She died in England, in 1617, while preparing to return to America.

**Pochard or Poachard**, a duck inhabiting the Arctic regions. Its cry has been compared to a serpent's hiss. Its flight is more rapid than that of the wild duck.

**Pococke, Richard**, an English traveler; born in Southampton, England, in 1704, and educated there and at Corpus Christi College, Oxford. He was the pioneer of Alpine travel. He died very suddenly in Charleville, near Tullamore, Sept. 15, 1765.

**Podargus**, a genus of Australasian nocturnal birds of the goatsucker family. By day they are drowsy.

**Podophyllum**, the **May apple**, called also the wild lemon. The fruit is eatable.

**Poe, Edgar Allan**, an American poet and story-writer; born in Boston, Jan. 19, 1809. Left an orphan early, he was adopted by John Allan, of Richmond, Va., and at the age of 19 left this home and published his first volume of verse at Boston. He was a cadet at the United States Military Academy, 1830-1831; and subsequently embarked on a literary career. He was one of the most remarkable characters in literature, gifted with genius, but apparently without any genuine sense of moral obligation to friends and benefactors. His place among American poets, however, will always be high. Poe died in Baltimore, Md., Oct. 7, 1849.

**Poet Laureate**, an office in the household of the sovereigns of Great Britain. The first appointment of a poet laureate dates from the reign of Edward IV., the first patent being granted in 1630. It was formerly the duty of the poet laureate to write an ode on the birthday of the monarch, but this custom has been discontinued since the reign of George III. Among those who have held this office are

Dryden, Southey, Wordsworth, and Tennyson. Alfred Austin is the present incumbent.

**Poetry**, that one of the fine arts which has for its object the creation of intellectual pleasure by the use of imaginative and passionate language, which is generally, though not necessarily, formed in regular measure; the art of producing illusions of the imagination by means of language. Also poetical, imaginative, or passionate language or compositions, whether expressed rhythmically or in prose. Thus, many parts of the prose translations of the Bible are genuine poetry.

**Poincare, Raymond**, a French statesman; born at Bar-le-Duc, France, Aug. 20, 1860; entered political life as a Deputy in 1886; was successively Minister of Agriculture, Public Instruction, and Finance; vice-president of Chamber of Deputies 4 years; became Premier and Minister of Foreign Affairs, Jan. 14, 1912; elected President of the French Republic, for the term of seven years, Jan. 17, 1913 to 1920. Premier 1922. Resigned July, 1929.

**Poison**. Any agent which, when introduced into the animal organism, is capable of producing a morbid or deadly effect upon it. Antidotes vary with the kinds of poisons. In cases of poisoning by acrid and corrosive substances, the fatty, mucilaginous substances, as oil, milk, etc., sheathe and protect the coats of the stomach and bowels against the operation of poison. Against metallic poisons, substances are employed which form with the poison insoluble compounds, such as freshly prepared hydrated oxide of iron, or dialysed iron for arsenic, albumin (white of egg) for mercury. Lime, chalk, and magnesia are the best remedies for powerful acids. Prussic acid is neutralized by alkalis and freshly precipitated oxide of iron. To arouse those poisoned by opium, use coffee and ammonia, and belladonna as an antagonistic drug. Chloral-hydrate poisoning is similarly treated; and for strychnia or nux vomica, animal charcoal in water and chloral-hydrate are used. Poisoning was common in ancient Rome, and in France and Italy during the 17th century, and recent American criminal records furnish noted cases of poisoning by use of the mail.

**Poison Ivy**, a climbing shrub, a species of sumac, resembling the woodbine, and very irritating to sensitive skins. Bathing the irritated parts with camphorated oil, vinegar, buttermilk, or with a decoction of sweet fern leaves, steeped in boiling water, are alleviating remedies.

**Poisson, Simeon-Denis**, a French geometer; born in Pithiviers, department of Loiret, June 21, 1781. He was one of the founders of the science of mathematical physics. He died April 25, 1840.

**Pokeweed**, a North American branching herbaceous plant, which is naturalized in some parts of Europe and Asia; the young shoots are sometimes eaten in the United States as asparagus.

**Poland**, Republic of, formed from reunited parts of old Kingdom at end of World War in 1918. Sixth State in size in Europe. It was the most level country in Europe, the Carpathian Mountains on the S. and W. being the only mountain range of any height in the kingdom. The rivers of chief note are the Vistula, Bug, Niemen, Dwina, Dnieper, and Dniester, either flowing into the Baltic or the Euxine. The principal mineral products are iron, lead, gold, and silver, with salt, which last, from the abundance of the yield, and the size and richness of the mines, was considered as the natural wealth of the country. The climate is extremely cold, humid, and unhealthy; the soil generally fertile. Cattle and wheat are still the chief agricultural products. Poland was anciently divided into 12 provinces, each of which was governed by a chief, called a "Palatine." The Poles were originally a tribe of Vandals, whose history is quite unknown before the 6th century. From the 13th century, the Poles became the most warlike nation in Europe, and from the time when the Turks first crossed the Hellespont and settled in Greece, Poland was denominated the shield of Eastern Europe. In 1674, John Sobieski was advanced to the kingly dignity, and under him the Polish arms acquired a glory that eclipsed all other nations of that age. Sobieski formed a league with the Emperor Leopold, and when that monarch had been defeated, and his capital on the point of



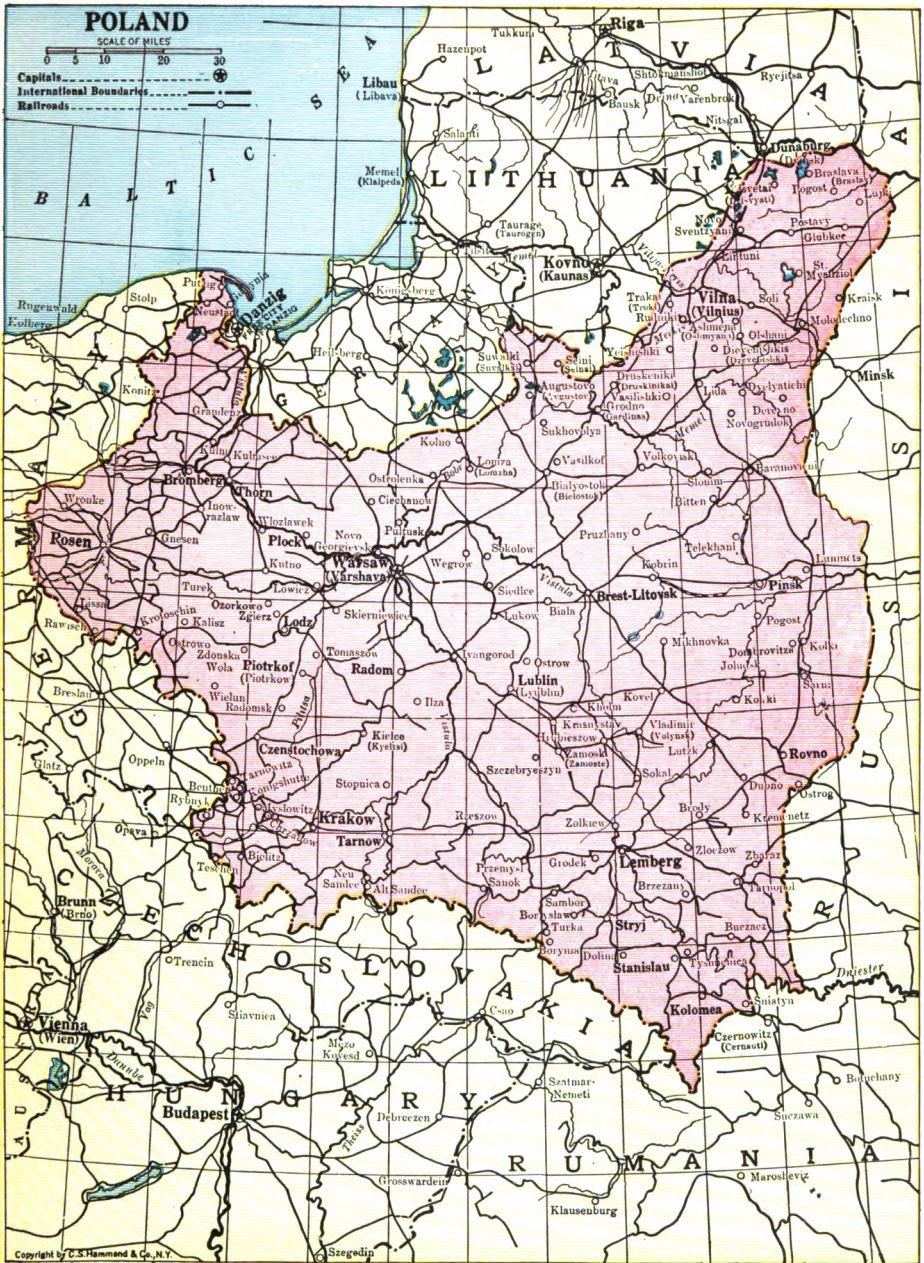
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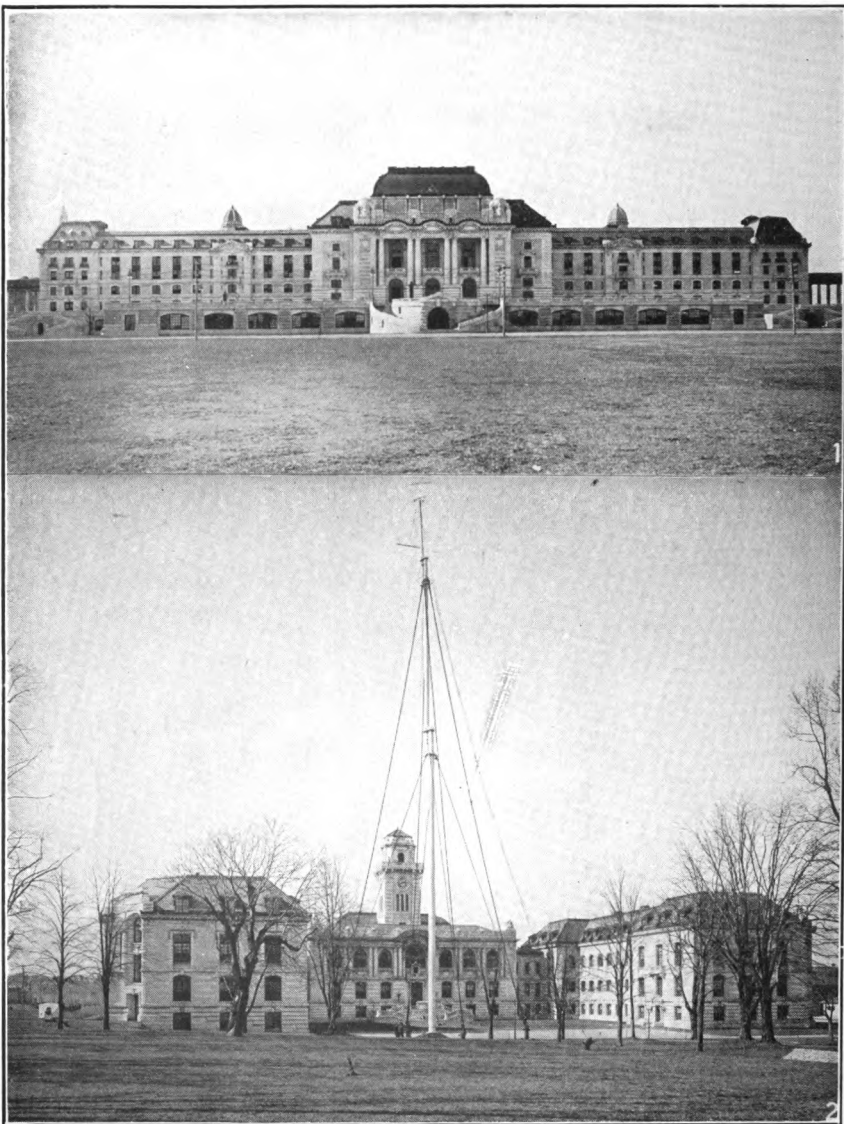
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## MAIN BUILDINGS AT ANNAPOLIS



1—Bancroft Hall, Naval Academy.

2—Academic Building.

Photos by Brown Bros.

falling into the hands of the Turks, Sobieski advanced to Vienna, raised the siege, and, defeating the invaders, drove them back in rout to Constantinople. The war of succession that succeeded, between Charles XII. of Sweden and Frederic Augustus of Saxony, almost ruined the kingdom and hastened its fatal end. Count Poniatowski who, in 1764, was elected to the throne by the name of Stanislaus Augustus, was the last King of Poland. Under this unfortunate sovereign, the country became the theater of a long and devastating war; and Poland was divided between Catherine of Russia, Joseph II., Emperor of Germany, and Frederic of Prussia. This partition of an ancient nation was perpetrated in 1772. In 1795, a further dismemberment was effected between the three great powers, and the whole of Poland absorbed, except the ancient city of Cracow, with a few miles of adjacent country, which was left to point to future ages where the once warlike nation of Poland stood on the physical map of Europe. Of the three spoilers of Poland, Russia possesses the largest share of territory and population. Frequent insurrections have occurred. In 1864, Poland was deprived of its administrative independence, and in 1868 was incorporated with Russia.

The aspirations of the Poles had been steadily tending for many years toward a United Poland, a country that should embrace all territory that had been wrested from her; but the World War brought to the distracted Poles a fourth partition of their fatherland. Early in the war Russia pledged the part of ancient Poland she had occupied a more popular, independent government; but as the war progressed the armies of the Central Powers overran and occupied the Russian provinces, so that the new kingdom set up in 1916 comprised only the districts conquered from the Russians. After a succession of wars with Russia over boundary questions the new Republic of Poland signed a treaty of Peace with Russia on March 18, 1921. By its terms Russia lost 87,000 sq. m. of territory and over 7,000,000 population. An alliance was made also with Rumania in 1921. Pop.

(1927 Est.) 29,589,000; area, 149,140 square miles.

**Poland, John Scroggs**, an American military officer; born in Princeton, Ind., Oct. 14, 1836; was graduated at the United States Military Academy and appointed a 2d lieutenant in 1861; served through the Civil War; was assistant Professor of Geography, History, Ethics and Drawing at the United States Military Academy in 1865-1869; and was chief of the Department of Law at the United States Infantry and Cavalry School, Fort Leavenworth, Kan., in 1881-1886. At the beginning of the war with Spain (1898) he was commissioned a Brigadier-General of volunteers and commanded the 2d division, 1st Army Corps, stationed at Chickamauga Park, Ga. He died Aug. 8, 1898.

**Polar Bear**, the largest individual of the family Ursidae, and one of the best known. It is found over the whole of Greenland, but its numbers are decreasing, as it is regularly hunted for the sake of its skin. It is quite white when young, changing to a creamy tint in maturity.

**Polar Circles**, two imaginary circles of the earth parallel to the equator.

**Pole**, in astronomy, one of the two points in which the axis of the earth is supposed to meet the sphere of the heavens.

**Pole, Reginald, Cardinal**, a British statesman and Archbishop of Canterbury in the reign of Queen Mary, descended from the blood royal of England; born in Stourton Castle, in Staffordshire, in 1500. He was educated at Sheen Monastery and Magdalen College, Oxford; and after obtaining preferment in the Church, went to Italy, where he long resided. On his return to England he opposed the divorce of Henry VIII. from Catherine of Aragon in such earnest terms, that the king drove him from his presence, and never saw him more. He again left England, was made a cardinal in December, 1536, and had the offer of the popedom on the death of Paul III. When Mary ascended the throne, Pole returned to England as legate, in which capacity he absolved the Parliament from their sin of heresy, and reconciled the nation to the

**Holy See.** The very day after the burning of Cranmer, the cardinal was consecrated Archbishop of Canterbury. He survived the queen but one day, and died Nov. 18, 1538.

**Folecat**, one of the *Mustelinæ*, akin to the marten, but with a broader head, a blunter snout, and a much shorter tail. It has a shorter neck and a stouter body than the weasel. Two glands near the root of the tail emit a highly offensive smell. It makes immense havoc in poultry yards, rabbit warrens, and among hares and partridges, killing everything which it can overpower.



POLECAT.

**Pole Star**, Polaris, a bright star at the tip of the tail of Ursa Minor, and in a line with the pointers Merak and Dubhe, the two stars constituting the front of the plowlike figure in Ursa Major. The pole star is really a double star of yellow hue, but while the larger or visible one is between the second and third magnitude, its companion is only of the ninth, and therefore a telescopic star. There is no corresponding star in the Southern Hemisphere.

**Police**, a system of judicial and executive administration of a country, especially concerned with the maintenance of the quiet and good order of society. In a more limited sense, the administration of the laws, by-laws, and regulations of a city. The designation, also, of a body of men, not military, appointed to enforce state and municipal laws, and preserve the peace.

**Political Economy**, the science which investigates the nature of wealth and the laws of its production and distribution, including the operation of

causes by which the condition of mankind in respect to this object of human desire, is made prosperous or the reverse. Inquiries on these points must have existed from the earliest times in every nation, but political economy as a science is dated from recent times.

**Political Offenses**, those offenses considered injurious to the safety of the state. In modern times the crimes considered political offenses have varied at different periods and in different states. In the United States and in most of the countries of Europe, extradition treaties do not include giving up political offenders.

**Political Parties**, divisions of people in a State marked off by the particular views they hold as to the public policy to be pursued in the best interests of the people at large. In the United States the chief political parties are the Democrats and the Republicans.

**Politics**, the science which treats of the distribution of power in a country. Popularly, the political sentiments of an individual, his procedure in promoting the interests of his party.

**Polk, James Knox**, an American statesman, 11th President of the United States, born in Mecklenburg co., N. C., Nov. 2, 1795. His ancestors, who bore the name Pollock, emigrated from the W. of Ireland early in the 18th century. He was educated at the University of Nashville, Tenn., to which State his father had removed in 1806, and was admitted to the bar in 1820. In 1823 he was sent to the Tennessee Legislature, and in 1824 to Congress, to which body he was reelected for seven successive terms, serving till 1839. He was made chairman of the Committee of Ways and Means in 1833, and twice elected Speaker of the House—1835-1837. In Congress he was consistently a Democrat, supporting unwaveringly the administration of Jackson and Van Buren, and opposing that of Adams. In 1839 he was elected governor of Tennessee, and in 1844 unexpectedly nominated as a compromise candidate of the National Democratic Convention for the presidency, and elected over Henry Clay, the Whig candidate. His administration was eventful, and in some respects

brilliant. Texas was annexed, and the Mexican War fought, which, with territorial purchases, added the great territory now comprising Texas, California, New Mexico, Utah, Nevada, and the W. part of Colorado to the domain of the United States. The Oregon boundary forming one of the issues on which he was elected, was settled by a compromise offered by England. He was a man of eminent administrative abilities, of consistent principles, and pure and upright private character. At the close of his single term Polk declined to stand for renomination, and retired to private life in Nashville, Tenn., where he died June 15, 1849.

**Polk, Leonidas**, an American military officer; born in Raleigh, N. C., April 10, 1806; was a cousin of President Polk, and grandson of Col. Thomas Polk, an officer of the Revolution. Graduating at the United States Military Academy in 1827, he received a commission in the artillery, but was induced to study for the ministry, and in 1830 received deacon's, and in 1831 priest's orders in the Episcopal Church. In 1838 he was consecrated Bishop of Arkansas and Indian Territory, with charge of the dioceses of Alabama, Mississippi, and Louisiana; in 1841 he resigned all these except the bishopric of Louisiana, which he retained till his death. Soon after the outbreak of the Civil War he was offered a major-generalship by Jefferson Davis, and accepted it; was promoted to Lieutenant-General. He was killed while reconnoitering on Pine Mountain, June 14, 1864, by a cannon shot fired by some Northern officers who wished to give the bishop's party a fright.

**Polka**, a well known dance, the music to which is in 2-4 time, with the third  $\frac{1}{8}$ th note accented.

**Pollard, Edward Albert**, an American journalist and author; born in Virginia, Feb. 27, 1828. As editor of the Richmond "Examiner" during the Civil War, he was an earnest advocate of the Confederate cause, but an active opponent of Jefferson Davis. He died in Lynchburg, Va., Dec. 12, 1872.

**Pollard, Josephine**, an American writer of juvenile literature; born in New York city, in 1843. She died there Aug. 15, 1892.

**Pollen**, in botany, the pulverulent or other substance which fills the cells of the anther. It consists of minute granules varying in size and inclosing a fluid containing molecular matter. In entomology, pollen collected from plants and carried on the outer surface of the tibiae of bees. Mixed with honey, it becomes the food of the larvæ.

**Pollock, Sir Frederick**, third baronet of the name; born Dec. 10, 1845. He was called to the bar and became Corpus Professor of Jurisprudence at Oxford, and Professor of Common Law. His younger brother, Walter Herries Pollock, born Feb. 21, 1850, was called to the bar and 10 years later became editor of the "Saturday Review."

**Pollock, Sir George**, field-marshal; born Westminster June 4, 1786; entered the army of the East India Company as lieutenant of artillery in 1803. In 1838 he reached the rank of major-general. After the massacre of General Elphinstone and his forces in the passes of Afghanistan the Indian government decided to send a force to the relief of Sir Robert Sale. The command of the relieving force was given to General Pollock. In April, 1842, he forced the formidable Khyber Pass, and reached Sir Robert Sale; he defeated the Afghan chief at Tezeen, and destroyed the bazaar in Kabul, and he recovered 135 British prisoners. He returned to England in 1846, and was created a field-marshal in 1870. He died Oct. 6, 1872.

**Poll Tax**, a tax levied per head. In the United States a poll tax (varying from 25 cents to \$3 annually) is levied in most of the States, in addition to the taxes on property.

**Pollux**, a celebrated hero of the Grecian mythology, and twin brother of Castor, after whose death he implored Jupiter to render him immortal. His prayer could not be entirely granted, but Jupiter divided immortality between the brothers, each living and dying alternately. In astronomy, one of the twins forming the constellation Gemini. Also the name of a star of the second magnitude in the same constellation.

**Polo**, an equestrian game, which may be shortly described as hockey on

horseback. It is of Oriental origin and of high antiquity; it has been claimed that it can be traced back to 600 B. C. Since 1876 many polo clubs have been started in the United States.

**Polo, Marco**, a Venetian traveler of the 13th century, the son of a merchant, who, with his brother, had penetrated to the court of Kublai, the great khan of the Tartars. This prince, being highly entertained with their account of Europe, made them his ambassadors to the Pope; on which they traveled back to Rome, and, with two missionaries, once more visited Tartary, accompanied by the young Marco who became a great favorite with the khan. Having acquired the different dialects of Tartary, he was employed on various embassies; and after a residence of 17 years, all the three Venetians returned to their own country in 1295, with immense wealth. Marco afterward served his country at sea against the Genoese, and, being taken prisoner, remained many years in confinement, the tedium of which he beguiled by composing the history of his "Travels."

**Polonaise**, a Polish national dance, which has been imitated, but with much variation, by other nations.

**Poltava**, or **Pultawa**, a province of Russia, bounded by Czernigov, Kharkor, Ekaterinoslav, Kherson, and Kiev; area, 19,265 square miles; pop. (Est.) 3,850,000; is one of the most fertile and best cultivated portions of the Russian empire. The capital, of the same name, is at the confluence of the Poltava with the Worskla, and is especially noted because of the great fair held annually on July 20. Here is a monument to Peter the Great, who defeated Charles XII. in 1709 at this place. Pop. (1926 Est.) 89,391.

**Polyandry**, the marriage of one woman to several men at once. There are several forms of it, each an advance on its predecessor: (1) One wife has several unrelated husbands, and each of the husbands other unrelated wives; (2) the unrelated husbands have but one wife; (3) the husbands are related; (4) the husbands are brothers.

**Polybius**, a Greek historian; born in Megalopolis, Greece, probably about

204 B. C. His great work is a general history of the affairs of Greece and Rome from 220 B. C. to 146 B. C. Five only of its 40 books are now extant. He died at the age of 82.

**Polycarp**, St., one of the apostolical fathers of the Church, and a Christian martyr, who, according to tradition, was a disciple of the Apostle John, and by him appointed Bishop of Smyrna; suffered martyrdom A. D. 155.

**Polycrates**, a ruler of the island of Samos from about 536 to 522 B. C. He conquered several islands on the Asiatic mainland, waged war successfully against the inhabitants of Miletus and defeated their allies the Lesbians in a great sea fight. His intimate alliance with Amasis, King of Egypt, proves the importance in which this daring island-prince was held even by great monarchs. Oretes, the Persian satrap of Sardis, had conceived a deadly hatred against Polycrates, and, having enticed the latter to visit him at Magnesia by appealing to his cupidity, he seized and crucified him.

**Polygamy**, the practice or condition of having a plurality of wives at the same time. It is prohibited by law in all Christian countries, but is practiced by Mohammedans and by the uncivilized peoples of Africa and the South Seas. The Mormons adopted it, but have now ostensibly renounced it.

**Polyglot**, a collection of versions in different languages of the same work, but is almost exclusively applied to manifold versions of the Bible.

**Polygen**, in geometry, a portion of a plane bounded on all sides by more than four limited straight lines.

**Polygyny**, the marriage by one man of several wives at the same time.

**Polyhymnia**, one of the Muses, daughter of Jupiter and Mnemosyne, who presided over singing and rhetoric, and was deemed the inventress of harmony.

**Polynesia**, a general name for a number of distinct archipelagoes of small islands scattered over the Pacific Ocean, extending from about lat. 35° N. to 35° S., and from lon. 135° E. to 100° W., the Philippines, New Guinea, Australia, and New Zealand being excluded. The islands are distributed into numerous groups, having a general direction from N. W. to S.



**E.** The islands may be divided into two chief classes, volcanic and coral islands. Some of the former rise to a great height, the highest peak in the Pacific, Mauna Loa, in Hawaii, reaching 13,600 feet. The elevations of the coral formation groups do not exceed 500 feet.

Polynesia has a comparatively moderate temperature, and the climate is delightful and salubrious. The predominating race, occupying the central and E. portion of Polynesia, is of Malay origin, with oval faces, wide nostrils, and large ears. The hair and complexion vary, but the latter is often a light brown. Their language is split up into numerous dialects. The other leading race is of negroid or Papuan origin, with negro-like features and crisp mop-like hair. They are confined to Western Polynesia, and speak a different language, with numerous distinct dialects. Christianity has been introduced into a great many of the islands, and a large number of them are under the control of one or other of the European powers. The Ladrões were discovered by Magellan in 1521, the Marquesas by Mandana in 1595, but it was not till 1767 that Wallis, and subsequently Cook, explored and described the chief islands. Since the natives came in contact with the whites their numbers have greatly decreased.

**Polyp**, a name usually applied to an animal like the fresh-water hydra or like the sea anemone, having a tubular body and a wreath of many tentacles around the mouth.

**Polyphemus**, in mythology, the king of all the Cyclops in Sicily, and son of Neptune and Thoosa. He is represented as a monster of immense strength, and with one eye in the middle of the forehead. He fed on human flesh, and kept his flocks on the coasts of Sicily.

**Polyphone**, a character or vocal sign representing more than one sound.

**Polytechnic College**, a coeducational institution in Fort Worth, Tex.; founded in 1891 under the auspices of the Methodist Episcopal Church.

**Polytechnic Institute**, an educational non-sectarian institute in Brooklyn, N. Y.; founded in 1854.

**Polytechnic School**, an educational establishment in which instruction is given in many arts and sciences, more especially with reference to their practical application.

**Polytheism**, the worship of many gods. It is not necessarily the same as idolatry, for gods may be adored without of any image of them being made.

**Pombal**, **Sebastian Joseph de Carvalho e Mello, Marquis of**, a Portuguese statesman; born May 13, 1699, at the castle of Soure, near Coimbra. In 1739 he was appointed ambassador in London, and six years later was sent to Vienna in a similar capacity. Just before Joseph I. ascended the throne of Portugal (1750), Pombal was appointed secretary for foreign affairs. When the great earthquake happened at Lisbon in 1755 Pombal displayed great calmness and fertile resource, so that next year the king made him prime minister. He crushed a revolt instigated by the great nobles and the Jesuits, and in 1759 banished the latter from the kingdom. The tyranny of the Inquisition was broken. Agriculture, commerce, and the finances were all improved. In 1758 he had been made Count of Oeyras, and in 1770 he was created Marquis of Pombal. On the accession of Joseph's daughter, Maria I. (in 1777), Pombal was deprived of his offices and banished from court. He died in his castle of Pombal, May 8, 1782. The cruelty shown in the punishment of the conspirators against King Joseph is a lasting blot on his memory.

**Pomegranate**, a dense, spiny shrub, 15 to 25 feet high, a native of W. Asia and N. Africa, and cultivated in Florida and California for its sweet sub-acid fruit.

**Pomerania**, or **Pommern**, a province of Prussia, bounded by the Baltic, Mecklenburg, Brandenburg, and West Prussia; area, 11,628 square miles; pop. (1919) 1,787,904. The center of trade is Stettin, which is one of the chief commercial cities of Prussia. Pomerania was originally inhabited by Goths, Vandals, and Slavs. It is first mentioned in history in 1140, and was an independent duchy until 1637.

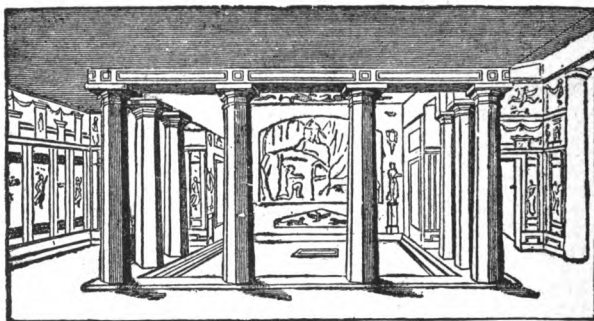
**Pomona**, the Roman divinity of the fruit of trees. In works of art she

was generally represented with fruits in her lap, or in a basket, with a garland of fruits in her hair and a pruning knife in her right hand.

**Pomona College**, a coeducational institution in Claremont, Cal.; founded in 1887, under the auspices of the Congregational Church.

**Pompeii**, a seaport at the mouth of the Sarnus, on the Neapolitan Riviera, founded about 600 B. C. by the Oscans, and after them, occupied by the Tyrrheno-Pelasgians, and by the Samnites, till these, about 80 B. C., were dispossessed by the Romans. From that time down to its destruction, A. D. 79, it became a sort of Rome-super-Mare, frequented by the aristocracy. On Feb. 5, A. D. 63, by an earthquake in the

torrents that intermittently fell. For three days the flight of the inhabitants continued till Pompeii was abandoned by all who could effect their escape. By the fourth day the sun had partially reappeared, and the more courageous of the citizens began to return for such of their property as they could disinter. The reigning emperor, Titus, organized relief on an imperial scale, and even undertook the clearing and rebuilding of the city. This attempt was soon abandoned, and Pompeii remained a heap of hardened mud and ashes, gradually overgrown with grass—the wall of the great theater and the outline of the amphitheater alone marking its site—till 1592, when the architect Fontana, in cutting an aque-



A POMPEIIAN HOUSE.

vicinity, these buildings were all but levelled with the ground, and some years elapsed ere the fugitive citizens recovered confidence enough to reoccupy and rebuild what was once Pompeii. Revolutionized as it was for the worse, the city, however, retained much of Greek character and coloring, and had relapsed into more than its former gaiety and licentiousness, when on Aug. 23 (or, more probably on Nov. 23), 79, with a return of the shocks of earthquake, Vesuvius was seen to throw up a column of black smoke expanding like some umbrella pine of the neighborhood, till it assumed the proportions of a great swarthy cloud, dense with ashes; pumice, and red-hot stones, settling down with a force increased by the rain-

duct, came on some ancient buildings. Unsystematic, unscientific excavations proceeded fitfully till 1860, when the Italian kingdom took in hand the unearthing of the city. This was carried out with admirable ingenuity, care, and success, and it now attracts the pilgrim from every clime for the object lessons it is unique in affording as to the public and private life of antiquity.

House construction consists mainly of concrete or brick, and sometimes of stone blocks, especially at the corners. Two-storied, sometimes three-storied houses are numerous, though the upper floors, built of wood, have been consumed by the eruption. Stores usually occupied the ground floors of dwelling-houses, on their street aspect, let out to merchants or dealers as at the pres-

ent day, but not connected with the back part of the house. They could be separated from the street by large wooden doors, while inside they had tables covered with marble, in which earthen vessels for wine or oil were inserted. The storekeeper had sometimes a second room at the back, when he did not live on an upper floor or in another part of the town. Retail traffic must have been considerable at Pompeii, to judge from the number of those stores along the streets. Only a personal visit can convey an idea of the indoor life of the Pompeians, with whom the absence of glass, the fewness of the openings in the street aspect of the house wall, and the protection of these with iron gratings are among the points noted by the most casual visitor. As rebuilt after 63, Pompeii shows little marble, the columns being of tufa or brick cemented by mortar. A coating of stucco was laid over wall or column and presented an ample field for ornamental painting. This must have given to Pompeii its bright, gay coloring, which, with its reds, blues, and yellows, on column and capital, on wall and partition, harmonize so well with the glowing sunlight of the South.

**Pompey, Cneius Pompeius Magnus**, son of Pompeius Strabo, a Roman general; born in 106 B. C. He ranged himself with the aristocratic party of the republic. On the death of Sylla, in 78 B. C., Pompey went as proconsul to Spain. With Crassus he crushed the Marian party, and in 70 B. C. Pompey and Crassus were elected consuls. He was made absolute dictator in the East, and superseded Lucullus in the command against Mithridates. The latter he completely routed in 66 B. C. In 60 B. C. he joined Cæsar and Crassus in the triumvirate, the former of whom gave him his daughter Julia in marriage. In 54 B. C. Julia died; in the year following, Crassus was slain in Asia; and the hostility between Cæsar and Pompey rapidly developed itself. Cæsar crossed the Rubicon with his troops, 49 B. C., and Pompey, accompanied by Cato, Cicero, and other nobles of Rome, fell back on Greece, where the great battle of Pharsalia decided his fate. Pompey was advised to seek an asylum in Egypt, then ruled by a sovereign he

had protected, Ptolemy XII. He was received with pretended friendship, but murdered as soon as he stepped ashore, 48 B. C.

**Ponce**, second city in commercial importance in Porto Rico; in Department of same name;  $2\frac{1}{2}$  miles N. of the S. coast, 45 miles S. W. of San Juan; has a spacious harbor; is well-built, largely of brick; is the seat of a Roman Catholic Cathedral; has two handsome plazas, public library, and several hospitals and asylums; and is chiefly engaged in raising sugar cane, cacao, tobacco, and cattle. Pop. (1920) 41,912.

**Ponce de Leon, Juan**, a Spanish explorer, the discoverer of Florida; born in San Servas, Spain, in 1460; was a court page, served against the Moors, and in 1502 sailed with Ovando to Hispaniola, and became governor of the E. part of the island. In 1510 he obtained the government of Porto Rico, and had conquered the whole island by 1512. He then set out on a quest for the fountain of perpetual youth, and on March 27, 1512, found Florida. He secured the appointment of adelantado of the country, and returned in 1521 to conquer his new subjects; in this, however, he failed. He retired to Cuba, and died there in July from the wound of a poisoned arrow.

**Pond, Frederick Eugene**, an American journalist and author; born in Marquette co., Wis., April 8, 1856.

**Poniatowski, Joseph, Prince**, a Polish general; born in Warsaw, Poland, in 1763, and when young entered the Austrian service, but when the Poles rose against Russia he quitted it, and joining his countrymen, fought with them under Kosciusko. On the defeat of this general, Poniatowski sought refuge in Vienna, till the French entered Warsaw in 1806, when he was appointed to the command of the Polish army which was to co-operate with the French against Russia. Napoleon estimated his services so highly, that shortly before the battle of Leipsic he created him a Marshal of France. After this disastrous battle, the French were flying in utter confusion over the Elster, and Poniatowski was drowned in the attempt, Oct. 13, 1813.

**Poniatowski, Stanislas Augustus**, the last king of Poland, and one

of the early lovers of Catherine the Great of Russia. He died at St. Petersburg, in 1798, of a broken heart.

**Pontchartrain, Lake**, in Louisiana, about 5 miles N. of New Orleans, is 40 miles long and 25 wide. It is navigated by small steamers, and communicates with the Gulf of Mexico. The drainage of New Orleans is carried into the lake through canals.

**Pontiac**, a celebrated Indian chief of the Ottawa tribe; born about 1712. He was the leader in Pontiac's War, and was killed in Illinois in 1769.

**Pontiac's War**, an Indian war of 1763 between the English settlers and garrisons on the frontiers, and a combination of Indian tribes, under the leadership of Pontiac. The war lasted two years.

**Pontifex**, a bridge builder; a title given to the more illustrious members of the Roman colleges of priests. Their number was originally five, the president being styled Pontifex Maximus. The number was afterward increased to nine, and later still to 15. The title of Pontifex Maximus is now the title of the Pope.

**Pontifical**, one of the service books of the Church of Rome, in which are contained the several services.

**Pontoon**, a floating vessel supporting the roadway timbers of a floating military bridge.

**Pony**, a term applied to several sub-varieties or races of horses, generally of smaller size than the ordinary horses and which are bred in large flocks and herds in various parts of the world, chiefly for purposes of riding and of lighter draught work.

**Poodle**, a breed of dog whose origin dates from the beginning of the 17th century or earlier. The poodle is one of the few breeds of dogs which has not been properly appreciated and cultivated in the United States. From his great intelligence and cleverness in learning tricks, he was generally adopted as a circus or "trick dog"; but this fact, instead of making for his credit, has caused the poodle to be treated with contempt.

**Pook, Samuel Hartt**, an American naval constructor, born in Brooklyn, N. Y., Jan. 17, 1827; was graduated at the Portsmouth Academy, N.

H., in 1843. He settled in Boston as a naval architect and designed many merchant and war vessels; entered government service, when the Civil War broke out, and at the close of the war entered the navy as assistant naval constructor and served at different navy yards till his retirement in 1899. He died in 1901.

**Pool**, a game played on a pool table. The term "poolroom" is applied to places, apart from race tracks, in which bets on horse-races are received, and as this is an illegal business, the word frequently occurs in the daily news.

Also, an arrangement between several competing lines of railway, by which the total receipts of each company are pooled, and distributed pro rata according to agreement.

**Pool, Maria Louise**, an American novelist; born in Rockland, Mass., in August, 1841. She died in Rockland, May 19, 1898.

**Poole, William Frederick**, an American bibliographer; born in Salem, Mass., Dec. 24, 1821; was a librarian of Boston, Cincinnati, and Chicago. His chief work is the celebrated "Index to Periodical Literature." He died in Evanston, Ill., March 1, 1894.

**Poor Clares**, a Roman Catholic religious order, having very severe rules, and called after the founder.

**Poore, Benjamin Perley**, an American author; born in Newbury, Mass., Nov. 2, 1820; spent several years abroad. On his return he became active in journalism. He died in Washington, D. C., May 30, 1887.

**Poor Priests**, a name given to, or assumed by, the Lollard clergy of the 14th and 15th centuries, who wandered about the country holding what would now be called "missions," without the sanction of the bishop of the diocese.

**Pope**, specifically, the Bishop of Rome. The term Papa, or Papas (father), has always been given by the Greek Church to presbyters, like the term Father now applied to a Roman priest. In the early centuries the bishops received the same title till, in a council held at Rome in 1076, at the instance of Gregory VII. (Hildebrand), it was limited to the Bishop of Rome. Holding that office, being

also Metropolitan of Rome and primate, and claiming to be the earthly head of the Church universal, it is in the last named capacity that the term Pope is held to be specially applicable. It has been a matter of controversy among Roman Catholics whether the authority of the Pope was above or below that of the General Council. That of Pisa (1409), claiming to be a General Council, deposed two rival Popes, and appointed a third; but the two former repudiated the authority of the council, and exercised their functions as before. The Council of Constance (1414-1418) also deposed two rival Popes and elected one. "The States of the Church" figured on the map of Europe as an independent sovereignty till Sept. 20, 1870, when the troops of Victor Emmanuel, King of Italy, entered Rome, and took possession of the palace for the Italian kingdom. No interference took place with the Pope's spiritual authority.

**Pope Pius XI.** See PIUS.

**Pope, Alexander,** an English poet; born in London, England, May 21, 1688. He picked up the rudiments of Greek and Latin from the family priest, and was successively sent to two schools, one at Twyford, the other in London. Before he was 15 he attempted an epic poem, and at the age of 16 his "Pastorals" procured him the notice of several eminent persons. In 1711 he published his poem the "Essay on Criticism," which was followed by "The Rape of the Lock," a polished and witty narrative poem founded on an incident of fashionable life. From 1713 to 1726 he was engaged on a poetical translation of Homer's works, the "Iliad" (completed in 1720) being wholly from his pen, the "Odyssey" only half. The pecuniary results of these translations showed a total profit of nearly \$45,000. He died in Twickenham, May 30, 1744.

**Pope, John,** an American military officer; born in Louisville, Ky., March 16, 1822; was graduated at the United States Military Academy in 1842, and entered the engineers. He served in Florida (1842-1844), and in the Mexican War, and was brevetted captain for gallantry. He was afterward employed in exploring and surveying in the West, till the outbreak of the Civil

War, when he was appointed Brigadier-General of volunteers. For 15 days in August, 1862, he faced Lee, but was defeated at the second battle of Bull Run, on the 29th and 30th. He then requested to be relieved, and was transferred to Minnesota, where he kept the Indians in check. He held various commands till 1886, when he retired. In 1882 he became Major-General, U. S. A. Pope died in Sandusky, O., Sept. 23, 1892.

**Popinjay,** a parrot; a figure of a bird put up as a mark for archers to shoot at. The green woodpecker is also sometimes called popinjay. Also applied to a man who dresses too showily.



OPIMUM POPPY.

a, whole plant; b, flower and leaf; c, ripe capsule; d, seed and section of seed enlarged.

**Popish Plot,** in English history, an alleged plot made known by Titus Oates in 1678. He asserted that two men had been told off to assassinate Charles II., that certain Roman Catholics whom he named had been ap-



pointed to all the high offices of the State, and that the extirpation of Protstantism was intended. On the strength of his allegation, various persons were executed. Gradually evidence arose that the whole story was a fabrication, and that the people who had been capitally punished were all innocent. On May 8, 1685, Oates, who had received a pension of \$10,000 for his revelations, was convicted of perjury, heavily fined, pilloried and publicly flogged. He died in 1705.

**Poplar**, a tree. Known species 18, from the N. temperate zone. The great white poplar, or abele, is a large tree, growing in moist places and mountain woods.

**Poplin**, a silk and worsted stuff, watered, figured, brocaded, or tissue. Originally an all-silk French goods.

**Popocatepetl** ("smoking mountain"), a volcano about 40 miles S. E. of the city of Mexico. It rises in the form of a cone to a height of 17,784 feet above the sea-level. No eruption has been recorded since 1540; it still smokes.

**Poppy**, a genus of plants, of which there are numerous species, mostly natives of Europe and Asia, some of them found in the very N. regions, but most of them in the warmer temperate parts. By far the most important species is that known as the opium poppy, also called the white poppy and the oil poppy. But the same species is important on account of the bland fixed oil of the seeds, and is much cultivated as an oil plant. Poppy oil is as sweet as olive oil, and is used for similar purposes. It is imported into the United States in considerable quantities from India. A variety with double flowers is cultivated in flower gardens, under the name of carnation poppy.

**Populist**, or **People's Party**, a political organization founded at Cincinnati, in May 1891; an outgrowth of the movements inaugurated by the Patrons of Husbandry (q. v.), and the Farmer's Alliance. Appealing to the agricultural and industrial classes, its avowed objects include free silver; national ownership of transportation and freight utilities; a graduated income tax; prohibition of alien ownership of land, etc.

**Porcelain**, a fictile material intermediate between glass and pottery, being formed of two substances, fusible and infusible, the latter enabling it to withstand the heat necessary to vitrify the former, thus producing its peculiar semi-translucency. The infusible material is alumina, called kaolin; the fusible substance is felspar, and is called pe-tun-tse, both Chinese terms.



PORCELAIN MARKS.

Large quantities of porcelain are produced in New Jersey, Ohio, and other states, while European porcelain, and Chinese and Japanese ware, are famous. See POTTERY.

**Porcupine**, a rodent quadruped. The North American porcupine is about two feet long, and of sluggish habits. The quills are short, and concealed among the fur, and the tail is short. The "tree porcupine" of South America has a prehensile tail, about 10 inches long. The porcupine of Southern Europe and Africa is about 28 inches long, exclusive of the tail. The head, fore quarters, and under surface are clothed with short spines, intermixed with hairs, crest on head and neck, hind quarters covered with long sharp spines, ringed with black and white, and erectile at will. They are but loosely attached to the skin and readily fall out, a circumstance which probably gave rise to the belief that the animal was able to project them at an enemy.

**Porcupine Crab**, a native of Japan. The carapace is triangular, and, like the limbs, thickly covered with spines. It is dull and sluggish in its movements.

**Porcupine Fish**, a fish found in the tropical seas. It is about 14 inches long, and is covered with spines or prickles.



**PREHENSILE-TAILED PORCUPINE.**

**Porgy, Pogy, or Paugie**, an important food fish found on the coast of the United States. It attains a length of 18 inches and a weight of about four pounds.

**Pork**, the flesh of swine; one of the most important and widely used species of animal food. The swine was forbidden to be eaten by the Mosaic law, and is regarded by the Jews as especially typical of the unclean animals. Other Eastern nations had similar opinions as to the use of pork. In the United States the pork-packing industry is one of the greatest factors of wealth. The immense establishments at Chicago, Kansas City, Omaha, St. Louis, Indianapolis, Cincinnati, and other cities, represent many millions of dollars invested in this branch of trade and commerce.

**Porosity**, the quality or state of being porous or of having pores.

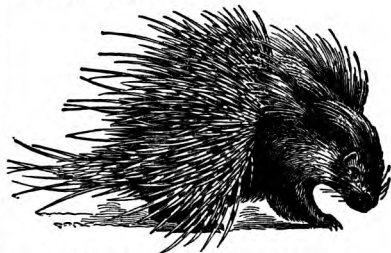
**Porphyrio**, a genus of birds occurring in South America, in Africa, and in the S. of Europe, but chiefly Oriental. In habits they resemble the water hen, but are larger and more stately birds.

**Porphyry**, a term originally applied to a rock having a purple covered base, with inclosed individual crystals of a felspar.

E-61

**Porpoise**, a small cetacean. The common porpoise, when full grown, attains a length of about five feet. The head is rounded in front, and the snout is not produced into a beak. The external surface is shining and hairless, dark grey or black on the upper parts, under pure white. It is gregarious in habit, and is often seen in small herds, frequenting the coasts rather than the open seas. It often ascends rivers, and ranges as far N. as Baffin Bay and as far W. as the coast of the United States.

**Porsenna**, or **Porsena**, a celebrated leader and king of Etruria, who declared war against the Romans because they refused to restore Tarquin to his throne. At first successful, he would have entered the gates of Rome had not Horatius Cocles stood at the head of a bridge and resisted the fury of the whole Etrurian army, while his companions behind were cutting off the communication with the opposite shore. This act of bravery astonished Porsenna; but when he had seen Mutius Scaevola, who had entered his camp with the intention of murdering him, burn his hand without emotion, to convince him of his fortitude, he no longer dared to make head against so brave a people. He made a peace with the Romans, and never after supported the claims of Tarquin.



**PORCUPINE: HYSTRIX CRISTATA.**

**Port**, a harbor, natural or artificial; into which vessels can enter, and in which they can lie in safety from storms. In law, a place appointed for the passage of travelers and merchandise into or out of the United States; a place frequented by vessels for the purpose of loading or discharging cargo, and provided with the apparatus necessary to enable them to do so.

**Port**, a species of red wine, produced chiefly in the mountainous districts of Portugal, and shipped from Oporto.

**Port Arthur, Lushwankau, or Lushunku**, a former naval station of China, with a fine narrow-mouthed harbor at the end and on the E. side of the peninsula jutting S. W. from Manchuria, opposite Chifu, strongly fortified; formerly the headquarters of the N. fleet of China. It was taken by the Japanese in 1894, and was restored to China by coercion of European powers. On Dec. 19, 1897, a Russian fleet occupied Port Arthur with China's consent, the pretext being that the ships would simply winter there. On Jan. 28, 1898, Port Arthur was ceded to Russia. At the breaking out of the Russo-Japanese War in 1904, Port Arthur was immediately assailed by the Japanese, and the Russian fleet in the harbor so effectually blocked that it was of no use to the Russians during the conflict. It was isolated on May 14, 1904, after a siege lasting 232 days; surrendered January 2, 1905, by the Russians to the Japanese—General Stoessel to General Nogi.

**Port Arthur Ship Canal**, an artificial waterway in Texas. The small town of Port Arthur is situated on Sabine Lake, a body of water 3 miles long and 10 miles wide, which marks the boundary of Texas and Louisiana. Seven and one-half miles from Port Arthur Sabine Lake narrows into a long channel called Sabine Pass. This channel is from 26 to 40 feet deep and extends for 7 miles to the S., terminating at the Gulf of Mexico. At the outer end of the pass is a bar which has been pierced by a channel formed by extending for a mile or more from shore two jetties of piled stone, built by the United States government.

**Port-au-Prince**, the capital of Haiti, situated on the W. coast at the head of a bay of the same name. Pop. (1924 Est.) 125,000.

**Portenilla**, a strong defensive framework of timber, hung in grooves within the chief gateway of a fortress, or a castle, or an edifice of safety.

**Porte, Ottoman, or Sublime Porte**, the common term for the Turkish government.

**Porter, David**, an American naval officer; born in Boston, Mass., Feb. 1, 1780, the son of a naval officer who fought through the Revolutionary War. He was appointed midshipman in 1798, and lieutenant the year after; saw service against privateers in the West Indies, and against Tripoli in 1801-1803; became captain in 1812, and captured the first British warship taken in the war. In 1813, with the "Essex" he nearly destroyed the English whale fishery in the Pacific, and took possession of the Marquesas Islands; but in March, 1814, his frigate was destroyed by the British in Valparaiso Harbor, and Porter returned home on parole. He afterward commanded an expedition against pirates in the West Indian waters, and was court-martialed for compelling the authorities of Porto Rico to apologize for imprisoning one of his officers. Porter resigned in 1826, and was for a time at the head of the Mexican navy. In 1829 the United States appointed him consul-general to the Barbary States, and then minister at Constantinople, where he died March 3, 1843.

**Porter, David Dixon**, an American naval officer; born in Chester, Pa., June 8, 1813; son of Commodore David Porter. He entered the navy as midshipman in 1829; was employed in 1836 to 1841 in the survey of the coast of the United States; in 1841 appointed as lieutenant to the frigate "Congress," and employed four years on the Mediterranean and Brazil stations; in 1845 was transferred to the National Observatory at Washington, and during the Mexican War to the naval rendezvous at New Orleans; again to the coast survey, and from 1849 to 1853 engaged in command of the California mail steamers. At the commencement of the Civil War he was appointed with the rank of commander, to the steam sloop-of-war "Powhatan"; distinguishing himself in the capture of New Orleans, and commanded the gunboat and mortar flotilla which cooperated with the squadron of Admiral Farragut in the first attack on Vicksburg. In the fall of 1862 he was placed in command of all the naval forces on the W. rivers above New Orleans, with the rank of rear-admiral. At the termination of

**Porter**

the war appointed superintendent of the United States Naval Academy, Annapolis. He was made vice-admiral in 1866, and in 1870 became admiral. He died in Washington, D. C., Feb. 13, 1891.

**Porter, Fitz-John**, an American military officer; born in Portsmouth, N. H., June 13, 1822; was graduated at the United States Military Academy in 1845; served in the Mexican War. In 1861 was appointed colonel of the 15th U. S. Infantry. For an alleged disobedience at the second battle of Bull Run, Aug. 29, 1862, Porter was court-martialed, and on Jan. 21, 1863, was cashiered. In 1878 a trial was granted, and the court recommended that the former sentence be reversed, and that he be restored to his former rank in the army, but no decisive action was taken. New evidence came to light, General Grant affirming that Porter had been unjustly treated, and a bill was introduced in Congress providing for his reinstatement. In 1886 the bill passed both Houses, and became a law by the signature of the President. He died in New York city May 21, 1901.

**Porter, Horace**, an American military officer and diplomatist; born in Huntingdon, Pa., April 15, 1837; son of David R. Porter, who became governor of the State. After a year in the scientific department of Harvard University he entered the United States Military Academy. His graduation took place in 1860. After a brief space as instructor in artillery at West Point, he was assigned to duty in the Department of the East. He served through the Civil War, becoming brevet Brigadier-General. When General Grant became Secretary of War General Porter became the assistant secretary, and during his chief's service as President acted as private secretary. General Porter then went into business and was exceedingly successful. The completion of the Grant monument was chiefly due to him. From 1897-1905 he was U. S. Ambassador to France, and instituted the search and recovery of the body of Paul Jones (q. v.). He published "Campaigning with Grant" (1897).

**Porter, James Davis**, born in Paris, Tenn., Dec. 7, 1828; was graduated at the University of Nashville

**Port Hudson**

in 1846; admitted to the bar in 1850; member of the Tennessee Legislature in 1859-1861; judge of the 12th Judicial Circuit in 1870-1874; governor of Tennessee in 1874-1878; United States assistant-secretary of State in 1885-1889; and United States minister to Chile in 1893-1897.

**Porter, Jane**, an English author; born in Durham, England, in 1776; daughter of an army-surgeon who died soon after her birth. She was brought up at Edinburgh and in London, and made a great reputation in 1803 by her high flown romance, "Thaddeus of Warsaw," which was distanced in its kind in 1810 by "The Scottish Chiefs." She died in Bristol, England, May 24, 1850.

**Porter, John Addison**, an American journalist; born in New Haven, Conn., April 17, 1856. He was editor of the Hartford "Post." President McKinley appointed him "secretary to the President"—an office that was created to replace the misnamed post of the "private secretary" at the White House. He died in Putnam, Conn., Dec. 15, 1900.

**Porter, Noah**, an American educator; born in Farmington, Conn., Dec. 14, 1811. In 1846 he was appointed Professor of Metaphysics at Yale University; and was president of that institution from 1871 to 1885. He died in New Haven, Conn., March 4, 1892.

**Porter, Robert P.**, an American statistician; born in Norfolk, England, Jan. 30, 1852; settled in the United States in 1867, and soon afterward engaged in journalism; was for a while superintendent of the 11th census; and was a special United States commissioner to Cuba and Porto Rico in 1898-1899.

**Porter, Rufus**, an American inventor; born in West Roxford, Mass., May 1, 1792; died 1884. Devised a thermo-engine, rotary-engine, etc. Founded "The Scientific American."

**Port Hudson**, a village of Louisiana, on the Mississippi, 135 miles above New Orleans. A Confederate strategical stronghold, it was besieged by Admiral Farragut and General Banks, but resisted all assaults from Mar. 14, to July 7, 1863, when the surrender at Vicksburg led to its capitulation.

## Port Huron

**Port Huron**, city; capital of Clair Co., Mich., on Lake Huron, at the head of St. Clair River, 60 miles N. E. of Detroit. It has important ship-building, lumber, machinery and other works, and a large trade. Pop. (1930) 31,361.

**Portland**, city, port of entry, and capital of Cumberland county, Me.; on Casco bay and the Maine Central railroad; 100 miles N. E. of Boston; is the largest and most important city in the State; has an excellent harbor, protected by a massive breakwater; contains National fortifications, Government Building and Marine Hospital, Maine General Hospital, Longfellow homestead, Portland School for the Deaf, Maine Historical Society, and many other buildings of note; and has large manufacturing and coastwise and foreign trade interests. Pop. (1930) 70,810.

**Portland**, city and port of entry, and capital of Multnomah county, Ore.; on the Willamette river and the Northern and Southern Pacific railroads; 530 miles N. of San Francisco; has large trade with Great Britain, the Philippines, China, Japan, Hawaii, and South American countries, in flour, grain, lumber, fish, and wool; contains Portland University, Medical and Law Schools of the State University, Good Samaritan, Portland, and St. Vincent's hospitals, Bishop Scott and St. Helen's schools, and St. Michael's College; was the site of the Lewis and Clark Exposition in 1905. Pop. (1920) 258,288; (1930) 301,815.

**Porto Rico**, an island of the West Indies, one of the Greater Antilles, ceded to the United States by Spain as a result of the war of 1898; is about 108 miles long and 37-43 miles wide, being a parallelogram in general shape; area about 3,606 square miles; pop. (1922) 1,346,623; capital, San Juan.

For administrative purposes it is divided into the seven departments of Mayaguez (extreme W.); Aguadilla (N. and S.) Arecibo (N.), Ponce (S.), San Juan (N.), Guayama (S.), and Humacao (extreme E.). The principal cities are Mayaguez, Ponce, and San Juan. The latter city is 1,411 miles from New York city, 1,200 from

## Porto Rico

Charleston, S. C., 1,050 from Key West, Fla., and 1,000 from Havana, Cuba.

The chief products are sugar, tobacco, coffee, pineapples, grapefruit, oranges, sea island cotton, textile fibres, phosphate, and vegetables; and the chief manufactures, cigars, cigarettes, hats, embroideries, drawn-work, and rum. In his report for the year ended June 30, 1916, Gov. Arthur Yager stated that the island had completely recovered from its economic embarrassment under which it had been laboring for some three years, and he attributed this restoration of prosperity to an extraordinary revival of the sugar industry, the chief commercial activity.

The total value of exports in the year was \$66,731,573, the highest total ever recorded, the increase in sugar alone being \$18,530,691, and the total, \$45,809,445. There was also an increase in the value of imports of \$5,066,860, the total reaching \$38,951,156. Nearly 92 per cent. of all the external trade was with continental United States, reaching a total value of \$96,845,283, out of a grand total of \$105,682,729. It was also noted that internal business generally had responded freely to the change in economic conditions.

In 1928 the public school enrollment was 220,940. There were 2,144 common schools, 66 high schools, 52 continuation schools, numerous Kindergartens and night schools, the University of Porto Rico at Rio Piedras, 7 miles from San Juan, a U. S. Agricultural Experiment Station at Mayaguez, and many religious, charitable, and correctional institutions.

The manufacturing industry, as reported by the 1910 census, had 939 plants, employing \$25,544,385 capital and 15,582 wage-earners, and yielding products valued at \$36,749,742. There are no scientific mining operations, but there is a very inviting field for such work, as gold, silver, iron, copper, bismuth, tin, mercury, platinum, and nickel have been found in sufficient quantity to encourage exploitation.

On June 30, 1928, the assessed valuation of taxable property was \$341,370,654; debt, \$25,517,000.

The Island of Viequez, 13 miles to



the E., is about 21 miles long and 6 miles broad; has a pop. of about 10,000; is very fertile; and is chiefly engaged in growing sugar and raising cattle. The island of Culebra, between Porto Rico and St. Thomas, has an excellent harbor, and has been converted into a naval base.

Soon after the surrender of Santiago de Cuba to the American forces under General Shafter, July 17, 1898, an army numbering 16,973 men was sent from Guantanamo to Porto Rico to take possession of that island. They landed July 25, at Guanica, 15 miles W. of Ponce. Lieutenant Haines, commanding the marines, went ashore and raised the American flag over the custom house, amid the cheers of the people. General Wilson was the first army officer to land, and was welcomed with cheers and a serenade. A portion of the army marched toward the capital, San Juan, but were stopped when about half way by the suspension of hostilities between the belligerent powers. On Oct. 18 the island was formally surrendered to the United States in the city of San Juan.

Under the Organic Act of Congress of April 12, 1900, and its amendments of May 1, 1900, and March 2, 1901, the executive authority is vested in a Governor and an Executive Council consisting of six heads of departments and five natives, all appointed by the President for four years; the legislative authority in an Assembly consisting of the Executive Council and a House of Delegates of 35 members, five from each department, elected by popular vote for two years; and the judicial authority in a Supreme Court of five justices, a U. S. District Court (both appointed by the President), 7 District Courts (appointed by the Governor), 34 Municipal Courts, and 61 justices of the peace. The island is represented in Congress by a Resident Commissioner. For several years a movement to grant the Porto Ricans full American citizenship, an elective Senate, an extension of the appointive judiciary system, and a more co-ordinate form of government by the separation of the executive and legislative functions, has been agitated in and out of Congress, but up to the end of 1917 nothing definite had resulted.

**Port Said**, a town of Egypt, on the W. side of the Suez Canal, on a desolate strip of land between Lake Menzaleh and the Mediterranean. The place owes its origin to the Suez Canal, and depends wholly on the canal trade.

**Portsmouth**, city and capital of Norfolk county, Va.; on the Elizabeth river and the Seaboard Air Line and other railroads; opposite Norfolk; has a harbor accessible to the largest vessels; contains a National Marine Hospital, Marine Barracks, and, in the Gosport suburb, the Norfolk navy-yard. Pop. (1930) 45,704.

**Portsmouth**, the principal station of the British navy, a seaport, municipal and parliamentary borough of England, in Hampshire, on the S. W. extremity of the island of Portsmouth. The royal dockyard covers an area of about 500 acres and contains a naval college. Pop. (1921) 247,343.

**Portsmouth, Treaty of**, signed at Portsmouth, N. H., Sept. 5, 1905, ended the Russo-Japanese War and embodied 15 articles and annexes. Its main points were the cession of half of Saghalin to Japan and Japan's sovereignty over Korea.

**Portugal**, a former kingdom of Europe; since Oct. 5, 1910, a republic; bounded by Spain and the Atlantic; area, 35,490 sq. miles; pop. (1920) 6,032,991.

The country generally inclines from N. E. to S. W. Several of the great mountain chains of Spain intersect it from E. to W. and terminate in large promontories in the Atlantic. The principal rivers are the Tagus, the Douro, the Minho, and the Guadiana. These all enter the country from Spain, and flow W. to the Atlantic Ocean. The climate is healthy, except in the vicinity of salt marshes.

The principal agricultural productions are: wheat, barley, oats, flax, hemp, vines, and maize in the elevated tracts; rice in the low grounds, with olives, oranges, lemons, citrons, figs, and almonds. Silk is made of a very good quality. There are extensive forests of oak in the N., chestnut in the center, and the sea pine and cork in the S. Cattle, sheep, goats, and swine are numerous, and fish abound in the rivers and on the coasts. Iron mines are worked, and the mountains

abound in fine marble, and contain traces of gold and silver. Of salt, large quantities are formed in bays along the coast, by natural evaporation. There are numerous salt marshes, and upward of 200 mineral springs. The manufactures are limited. Cotton spinning is followed, and paper, glass, and gunpowder are made in a few places.

The new constitution adopted Aug. 20, 1911, provided for two legislative Chambers, a National Council of 164 members elected by direct suffrage for three years and an Upper Chamber of 71 members elected by the Municipal Councils, renewable half at a time every three years. The President is elected by both Chambers with a mandate for four years, but he cannot be re-elected.

Portugal forms the greater part of ancient Lusitania. It was subjugated by the Romans, in the time of Augustus, and had been made into a province. In the 5th century, on the overthrow of the Roman supremacy, Portugal was invaded by the Alans and Visigoths, and suffered with Spain, of which it was then a part, all the troubles and vicissitudes endured by the inhabitants of the peninsula till the 8th century, at which time the Arabs, called indifferently Saracens or Moors, possessed themselves of the whole of Portugal, and kept absolute dominion for nearly 400 years. In the 12th century, Don Alonzo Henriquez, a Spanish prince of Leon and Castile, gained a great victory over the Moors of Portugal, and carried out his military operations with such success that his troops hailed him with one voice as king. He renounced all dependence on Spain, politically separated his new kingdom from all connection or authority with the Spanish crown, and established a free and sovereign state.

Under the descendants of Don Alonzo I., especially Dennis I. and Alonzo IV., Portugal, during the next two centuries, rose in political importance and commercial prosperity. In 1385, the King of Castile having laid claim to the crown of Portugal on the death of Ferdinand, was opposed and defeated by Don John, Ferdinand's brother. Under John I. the Portuguese first projected those Atlantic discoveries on the African coast,

fraught with such territorial and commercial advantages to the nation; and, under John II. and Emanuel, between 1481 and 1521, Vasco da Gama explored the Indian Ocean; and Brazil was added to the possessions of the crown of Portugal. Sebastian III., fired with a holy zeal to exterminate the infidels from his country, commenced a sanguinary crusade against the Moors, which he carried on through such defeats that he eventually lost both his crown and life in the struggle. Henry the Cardinal, his uncle, an old man of 70, ascended the throne, but died without heirs in 1580.

With Henry terminated the male line, after enduring for 460 years. Spain once more laid claim to the vacant throne, and Portugal again became a dependency of the Spanish crown. After enduring 60 years of intolerable hardships and exactions, a Portuguese nobleman named John, Duke of Braganza, excited a revolution, which again broke the Spanish fetters, while the people hailed their deliverer as their king. He was crowned as John IV., and commenced the existing dynasty of the House of Braganza. In October, 1889, Carlos I. succeeded to the throne. He was assassinated Feb. 1, 1908, and was succeeded by his son, Manuel II., who was dethroned Oct. 5, 1910, in a revolution resulting in the establishment of a republic. In the World War a large number of German vessels in Portuguese ports were first interned, and, after March 9, 1916, when Germany declared war on Portugal, were confiscated. See APPENDIX: *World War*.

**Positive Philosophy**, the system of philosophy outlined by Auguste Comte in his "*Philosophie Positive*," the sixth and last volume of which was published in 1842. It is the outcome of the Law of the Three Stages and is based on the positive sciences, taken in the following series: mathematics (number, geometry, mechanics), astronomy, physics, chemistry, biology, and sociology. It relinquishes attempts to transcend the sphere of experience, and seeks to establish by observation and induction laws or constant relations, and resigns itself to ignorance of the agents. In the opinion of its founder it is capable of be-

ing developed into a religion and a polity.

**Positive Society**, a society founded in Paris in 1848, by Comte, in the hope that it might exert as powerful an influence over the revolution as the Jacobin Club had exerted in 1789. In this he was disappointed, but the disciples who gathered around him were the germ of the Positivist Church.

**Positivism**, the religion of Humanity, developed from the positive philosophy, and claiming to be a synthesis of all human conceptions of the external order of the universe. Its professed aim is to secure the victory of altruism over egotism.

**Post, George Browne**, an American architect; born in New York city, Dec. 15, 1837; studied with Richard M. Hunt; designed numerous private residences and public buildings; and was president of the American Institute of Architects in 1896-9, and director of the Municipal Art Society from 1906. He died Nov. 28, 1913.

**Postal Savings Banks**, a system for saving money by the deposit of small amounts, established by several European Governments, and authorized by the United States Congress in 1910, as a branch of the Post-office Department. The system had long been urged in the United States, and the annual report of the British postal savings banks for 1908 had much effect on Congress. That report showed for the United Kingdom a total of 18,379,991 deposits, aggregating \$217,877,011, and a total of \$781,794,533 to the credit of 11,018,251 depositors. On June 30, 1926, the total postal savings for the United Kingdom was estimated at \$4,431,684,438 in deposits. In the year ending June 30, 1929 there were 416,584 depositors in the United States Postal Savings Banks and the deposits totaled \$153,644,529.

**Postal Service**, the regulation of communication between different parts of a country, or different countries, including especially the forwarding and delivering of letters, newspapers and small packages, and the establishment of a registry sys-

tem for the transfer of money and the transaction of other financial business. In some countries the use of the telephone and the telegraph forms a part of the postal service.

Though the conveyance of letters is the primary work of the postoffice, many other branches of business have been assumed by it. The word "post" has its particular application from the posts, or stages, at which on the roads of the Roman empire couriers were maintained for the purpose of conveying news and dispatches.

Under the terms of a treaty concluded at Berne, Oct. 9, 1874, the object of which was to secure uniformity in the treatment of correspondence, and the simplification of accounts, as well as the reduction of rates within certain limits, and whose provisions were carried into operation generally July 1, 1875, the whole of Europe, the United States, Egypt, British India, and all the colonies of France were at the outset, or shortly thereafter, included in the union and many other countries and colonies have since joined it. The international accounts in respect of postages are based on a month's return of correspondence taken every third year.

At the present time the postal establishment of the United States is the greatest business concern in the world. It handles more pieces, employs more men, spends more money, brings more revenue, uses more agencies, reaches more homes, involves more details and touches more interests than any other human organization, public or private, governmental or corporate. Though the postal service of England, France, and Germany includes the telegraph, the postal business of the United States surpasses the service of any of those countries.

Since Cuba, Porto Rico, and the Philippines have come under the authority of the United States, it has become necessary to reconstruct the mail system in those islands, and already a vast improvement has been made in the service.

**Post Mortem**, after death, as a post mortem examination, i. e., one made after the death of a person, in order to ascertain the cause of death either in the interests of science, or for the ends of justice.

**Post Obit**, a bond given as security for the repayment of a sum of money to a lender on the death of some specified person, from whom the borrower has expectations. Such loans in almost every case carry high, if not usurious, rates of interest, and generally the borrower binds himself to pay a much larger sum than he receives, in consideration of the risk which the lender runs in case of the borrower dying before the person from whom he has expectations.

**Postoffice Department**, one of the executive departments of the United States government; established in 1794. It is under the direction of the Postmaster-General, who is a member of the President's Cabinet. The department is divided into four great bureaus each under the immediate charge of an assistant postmaster-general. The first assistant's bureau has charge of the large clerical and carrier forces and all the matters of actual management. The bureau of the second assistant has the immense task of providing for the transportation of the mails. That of the third assistant looks after the financial side, furnishes the stamps, and keeps the accounts. The fourth assistant has charge of the appointment of postmasters and directs the force of inspectors. In the year ending June 30, 1930, there were over 50,000 post offices in the United States including the territories. The total revenue of the Department was \$705,484,098 and the total expenditures for the same period was \$803,700,085.

The addition of the Air Mail Service has added a new source of revenue, the rates being five cents for the first ounce or fraction thereof and ten cents for every ounce or fraction thereof thereafter. The government awards contracts to carry the mail to individual concerns who submit sealed bids.

**Postulate**, a position, supposition, or proposition assumed without proof, as being self-evident or too plain to require proof or illustration; a thing assumed for the purpose of future reasoning; an assumption. In geometry, the enunciation of a self-evident problem. It differs from an axiom, which is the enunciation of a self-evident proposition. The axiom is more general than the postulate.

**Potash**, a term applied to the hydrate of potassium, either in the liquid or solid state, but sometimes used to denote potassium oxide and also crude carbonate of potassium. Potash salts are essential constituents in the human body, but if, when wasted, they are supplied directly to the blood they are very poisonous.

**Potassium**, a monad metallic element, very widely diffused through the vegetable, mineral and animal kingdoms. It usually exists in combination with inorganic and organic acids, and, when its organic salts are burned, they are resolved into carbonate, from which all the other salts of potassium can be prepared. It may be obtained by electrolysis, but is now produced in large quantity by distilling in an iron retort an intimate mixture of charcoal and carbonate of potassium, a condition readily obtained by igniting crude tartar in a covered crucible.

**Potato**, a well-known cultivated plant, the tubers of which are eaten. It is a native of Chile and Peru. Many varieties are grown, differing in earliness, form, size, color, etc. In the calendar year 1916, the production in the United States was 285,437,000 bushels, having a farm value of \$417,063,000, the most productive States being Maine, New York, Pennsylvania, and Minnesota, in the order given.

**Potato Fly**, a dipterous insect of the same genus with the radish fly, cabbage fly, turnip fly. In its perfect state it is very like the house fly. The maggots are often abundant in bad potatoes in autumn, and are different from the maggots of the house fly, being horny, spiny, bristly, and tawny; the long tail ending in six long bristles. The pupa is very like the larva. The potato-frog fly and the caterpillar of the death's head moth feed on the leaves and stems of potatoes, but rarely do serious damage.

**Potomac**, a river of the United States, formed by two branches which rise in the Allegheny Mountains in West Virginia, and unite 15 miles S. E. of Cumberland, Md., from which point the river flows in a generally S. E. course 400 miles, and falls into Chesapeake Bay, after forming an estuary nearly 100 miles long, and





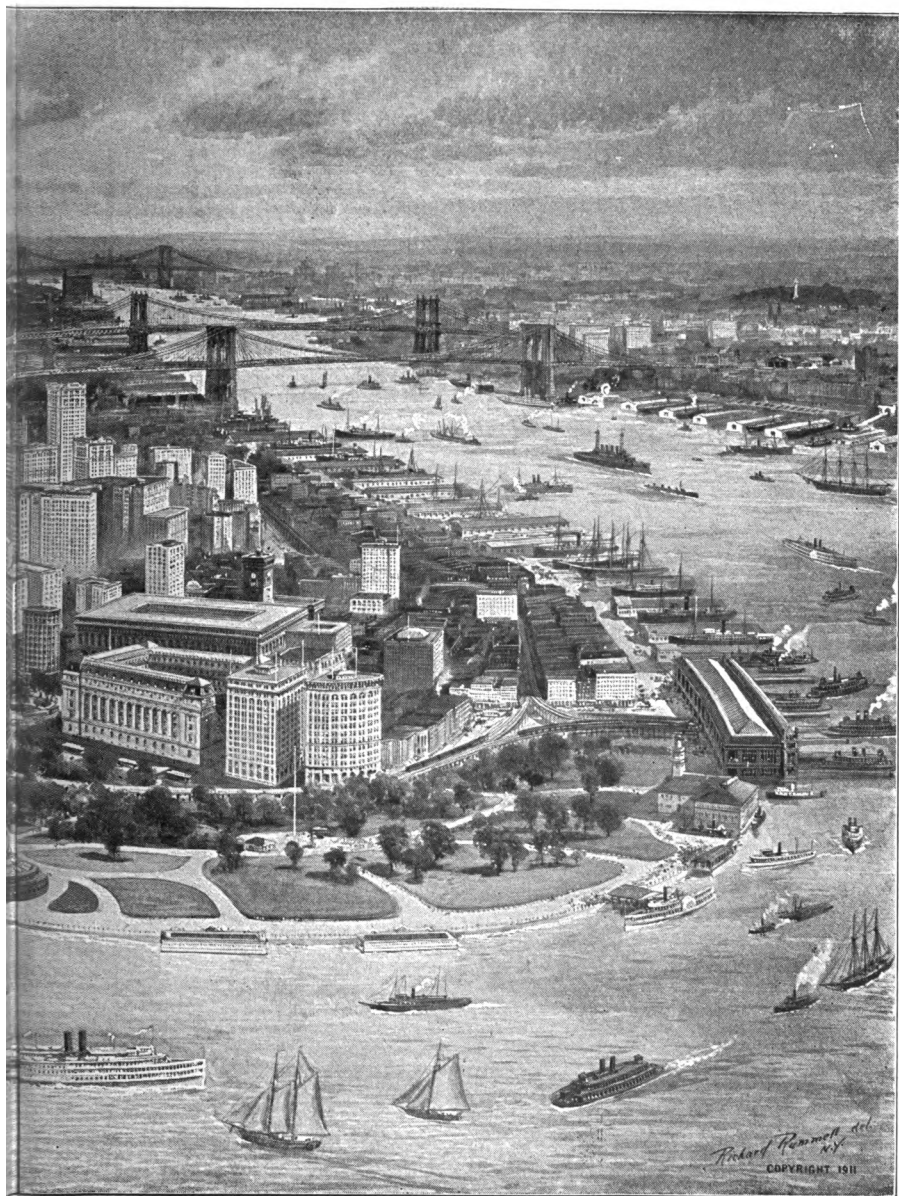
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# RARE STAMPS OF VARIOUS NATIONS





BIRD'S EYE VIEW LOWER



END OF MANHATTAN ISLAND





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# POSTAGE STAMPS OF VARIOUS NATIONS

# STAMPS

## Postage Stamps of Various Nations.

- 1 TURKEY
- 2 GERMANY
- 3 ORANGE RIVER COLONY
- 4 UNION OF SOUTH AFRICA
- 5 QUEENSLAND
- 6 VICTORIA
- 7 BELGIUM
- 8 NORWAY
- 9 NEW SOUTH WALES
- 10 PERU
- 11 VENEZUELA
- 12 CAPE OF GOOD HOPE
- 13 GREAT BRITAIN
- 14 GREECE
- 15 JAPAN
- 16 INDIA
- 17 COLOMBIA
- 18 GUATEMALA
- 19 BRAZIL
- 20 FRENCH GUIANA
- 21 SWITZERLAND
- 22 SIAM
- 23 BRITISH GUIANA
- 24 CUBA
- 25 FRANCE
- 26 NETHERLANDS
- 27 CHILI
- 28 NICARAGUA
- 29 BRITISH HONDURAS
- 30 HAYTI
- 31 NEW ZEALAND
- 32 CHINA
- 33 ITALY
- 34 SOUTH AUSTRALIA
- 35 MEXICO
- 36 ARGENTINA
- 37 ECUADOR
- 38 WESTERN AUSTRALIA
- 39 PORTUGUESE INDIES
- 40 SWEDEN
- 41 BOLIVIA
- 42 PANAMA
- 43 HONDURAS
- 44 NATAL
- 45 DENMARK
- 46 RUSSIA
- 47 EGYPT
- 48 LIBERIA
- 49 SPAIN
- 50 PERSIA
- 51 PARAGUAY
- 52 CANADA
- 53 EGYPTIAN SUDAN
- 54 TASMANIA
- 55 URUGUAY
- 56 AUSTRIA

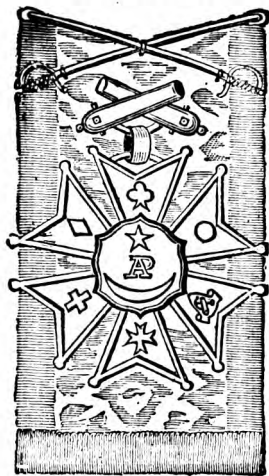
## Rare Stamps of Various Nations.

- 1 HONG-KONG (1880), 2 Cents.
- 2 MAURITIUS (1847), 2 Pence.  
Rare. Stamp-dealers' price  
for original, \$2,000.00.
- 3 BRITISH GUIANA (1889), 1  
Penny.
- 4 MOLDAVIA (1858), 81 Parale.  
Rare. Stamp-dealers' price  
for original, \$1,500.00.
- 5 NEW SOUTH WALES (1888), 1  
Penny.
- 6 INDIA (1892), 1 Rupee.
- 7 HUNGARY (1874), 2 Kreutzer.
- 8 ICELAND (1882), 3 Aur.
- 9 BRITISH HONDURAS (1888), 2  
Cents.
- 10 HAWAII (1851), 13 Cents.  
Rare. Stamp-dealers' price  
for original, \$500.00.
- 11 SALVADOR (1896), 5 Centavos.
- 12 SWITZERLAND (1862), 2  
Centimes.
- 13 JAPAN (1879), 2 Sen.
- 14 ST. HELENA (1894), Half-penny.
- 15 ARGENTINA (1888), Half-  
centavo.
- 16 PARAGUAY (1892), 2 Centavos.
- 17 AFGHANISTAN (1881), 1 Abassy.
- 18 AZORES (1895), 2½ Reis.
- 19 MEXICO (1895), 5 Cents.
- 20 MOROCCO (1892), 5 Centimos.
- 21 CYPRUS (1896), 30 Paras.
- 22 SAXONY (1850), 3 Pfennige.
- 23 NIGER COAST (1894), 1 Penny.
- 24 PERSIA (1882), 10 Francs.
- 25 COSTA RICA (1889), 20 Centavos.
- 26 BOLIVIA (1894), 2 Centavos.
- 27 SWEDEN (1891), 1 Ore.
- 28 PORTUGAL (1893), 5 Reis.
- 29 SHANGHAI (1893), Half-cent.
- 30 DUTCH INDIES (1882), 2½ Cents.
- 31 FRENCH COLONIES (1892), 1  
Centime.
- 32 LEEWARD ISLANDS (1890), 1  
Shilling.
- 33 BORNEO (1894), 3 Cents.
- 34 COREA (1885), 100 Mons.
- 35 BRITISH SOUTH AFRICA  
(1896), Half-penny.
- 36 CONGO (1895), 5 Centimes.
- 37 HOLLAND (1875), 10 Cents.
- 38 NEW ZEALAND (1895), Half-  
penny.
- 39 GUATEMALA (1886), 1 Centavos.
- 40 MONTENEGRO (1894), 1 Novitch.
- 41 ROMAN STATES (1868), 5  
Centesimi.
- 42 QUEENSLAND (1895), 1 Penny.
- 43 ANGOLA (1870), 5 Reis.
- 44 CUBA (1892), Half-millsemo.
- 45 NEW FOUNDLAND (1894), Half-  
cent.
- 46 BAHAMAS (1884), 1 Penny.
- 47 ECUADOR (1887), 2 Centavos.
- 48 AUSTRIA (1851), 10 Kreutzer.
- 49 FRENCH COLONIES (1859), 10  
Centimes.
- 50 GERMANY (1865), 3 Silber-  
groschen.
- 51 BULGARIA (1889), 1 Stotinki.
- 52 BRITISH BECHUANALAND  
(1887), Half-penny.

from 2½ to 7 miles wide. The largest ships can ascend to Washington. The Potomac forms the greater part of the boundary between Virginia and Maryland.

**Potomac, Army of the.** The Union forces which operated in Virginia in the Civil War were known as the "Army of the Potomac." It was organized by Gen. George B. McClellan in 1861, and served under him in the Peninsular campaign and later in that of Antietam. General Burnside took command in 1862, and General Hooker in 1863. General Meade was in command when the victory at Gettysburg was won, in July, 1863, and continued in charge during General Grant's operations in 1864-1865.

**Potomac, Society of the Army of the,** a military organization founded in New York, July 5, 1869, and has held annual reunions since that date. All officers and soldiers who served in



ARMY OF THE POTOMAC BADGE.

the Army of the Potomac and in the 10th and 18th Army Corps, Army of the James, are eligible to membership.

**Pottawattamies,** a tribe of American Indians, belonging to the Algonquin stock. The early French settlers established a mission among them

at Green Bay, and to this day many of them are Roman Catholics. They sided with the English during the Revolutionary War and in the War of 1812, and afterward settled in Kansas. They now number about 1,200.

**Potter, Henry Codman,** an American clergyman; born in Schenectady, N. Y., May 25, 1835. Educated in theology in Virginia, he became rector of Grace Church, New York city, in 1868; and was consecrated Protestant Episcopal bishop of New York in 1887. His works include: "Gates of the East: A Winter in Egypt and Syria"; "Sermons of the City"; "Waymarks"; etc. He was widely known and esteemed for his efforts to improve the condition of the people. He died July 21, 1908.

**Potter, Paul,** a celebrated Dutch painter of animals; born at Enkhuizen in 1625; died at Amsterdam in 1654. He received his first instruction in art from his father, Pieter Potter (1587-1655), a painter of some note. He devoted himself specially to the study of animals, producing his first signed picture, "The Herdsman," in 1643. His works are highly esteemed. His coloring is brilliant, and the separate parts are delicately executed, yet without stiffness or mannerism.

**Pottery,** the art of forming vessels or utensils of any sort in clay. This art is of high antiquity, being practised among various races in prehistoric times.

The most celebrated wares of different times and countries are distinguished by distinctive names; as, Majolica-ware, Sevres, Chelsea, Palissy, etc.; and of these, the latter—the work of Bernard de Palissy, who lived in the 16th century—deserves some special attention. Palissy, having resolved to discover a method of enamelling stoneware, succeeded, after 16 years' efforts, and proceeded to manufacture pottery characterized by a peculiar style and many singular qualities. It is not decorated with flat painting, but with figures and ornaments, which are generally pure in form, and are all executed in relief and colored. The most remarkable of the works of Palissy are his "Pieces rustiques," a designation given by him to dishes ornamented with fishes, snakes, frogs, crayfish, lizards, shells, and



plants, admirably true to nature in form and color. Palissy ware may be distinguished from imitations by the fact that Palissy molded only the fossil shells, reptiles, and plants of Paris, while his imitators introduced recent shells and other objects of natural history. The pottery products of the United States reached the high-water mark of value in 1913, when the total was \$37,992,375; and the imports were \$10,177,451.

**Potts, William**, an American author; born in Philadelphia, Pa., May 5, 1838. For many years he was secretary and vice-president of the National Civil Service League. He was chief examiner of the Civil Service Commission of New York State in 1887. He published a volume of nature studies, "From a New England Hillside," and a Sunday-school service book, "Noblesse Oblige," etc. He was also the author of numerous pamphlets. He died July 29, 1908.

**Pottstown**, a borough in Montgomery county, Pa.; on the Schuylkill river and canal, Manatawny creek, and the Pennsylvania and other railroads; 18 miles S. E. of Reading; is chiefly engaged in the manufacture of pig and structural iron, with extensive accessories; also has planing, flour, silk, hosiery, and underwear mills, cigar factories, and pork-packing plant. Pop. (1930) 19,430.

**Pottsville**, borough and capital of Schuylkill county, Pa.; on the Schuylkill river and canal, Norwegian creek, and the Philadelphia & Reading and other railroads; 93 miles N. W. of Philadelphia; is one of the greatest coal shipping centers in the State; and has large iron, steel and brass works, railroad shops, and silk, flour, and lumber mills. Pop. (1925) 24,300. Pop. (1930) 24,300.

**Poughkeepsie**, city and capital of Dutchess county, N. Y.; on the Hudson river and several railroads; 75 miles N. of New York city; has a noted \$5,000,000 cantilever railroad bridge across the river, daily steamboat connection with Albany and New York city, and important manufactures; is the seat of Vassar College, Hudson River Hospital for the Insane, and numerous Homes; was settled by the Dutch in 1690; State

capital during the Revolution. Pop. (1930) 40,288.

**Poulpe**, a genus of Cephalopoda, having eight feet or arms, nearly equal, united at the base by a membrane, and very long in proportion to the body. Poulpes swim by contractions of the muscular web of the body, which extends upon the arms. They creep on shore in a spider-like manner, with sprawling arms.

**Poultry**. American poultry include several classes of breeds, among them the general utility, or American barnyard fowl; the egg-producing, or Mediterranean; and the flesh-making, or Asiatic types.

The chief of the general utility fowls are the handsome, compact Plymouth Rocks, those barred in black and white being the most common, although white and buff are known. They are famous for their hardiness; quickness of growth; steady production of light brown eggs; quick maturity into well-fleshed chickens; and their general tractability and business-like methods of foraging, sitting and the like. Wyandottes, including the white, silver-laced and Columbian varieties, compete with the Plymouth Rocks. The White Wyandottes are favorites in farmyards, being hardy fowls, maturing quickly into small, plump broilers and roasters, with the popular yellow skins, and are early and steady egg-layers. The large Rhode Island Reds, a somewhat new breed, gorgeous in black and scarlet, lay brown eggs very regularly, and also produce flesh; and, with the Orpingtons, particularly the buff variety, having similarly good habits, are claimed to be in the highest rank of utility fowls. Javas and the high-crested Houdans are also said to be useful to the farmer. The latter is a favorite French breed, mottled black and white, laying many very large white eggs, even in winter, and of fine quality as a table fowl.

The "fancy" Hamburgs, silver and gold, black and red and white, spangled and laced and penciled, and most perfectly formed, are non-sitters; and the tall, iridescent, black Minorcas are recommended for prolific egg-laying, thriving when in confinement in small runs.

The Mediterranean type is repre-

sented by the small, active Leghorns, white and brown and buff in hue, famous egg-layers even in winter, when sheltered in warm houses, and picking up much forage if given a free run.

The Asiatic type is represented by the large, heavy and profusely feathered light and dark Brahmas, covered with rounded masses of feathers and with characteristic "pea-combs"; by the buff, black and white Cochins, still more profusely feathered, even the shanks and feet being covered with plumage; especially in the "Partridge" variety; and by the tall, black Langshans. They are all excellent table-fowls, and lay quite a number of eggs even in winter; and they are addicted to sitting, making good mothers. The chicks mature early, and have a large sale as broilers and roasters. Plump-breasted Dorkings are more valued in England than with us, the Americans preferring yellow legs and feet.

The red and black game-chickens, formerly grown for fighting in the cock-pits, are still raised, the Modern Game, and various kinds of the Old English Black-breasted Reds and the Cornish Indian and Azeel, being exhibited. Game hens are excellent mothers and are magnificent table fowls. Speckled Guinea hens, having a game-like flavor, are frequently raised for the table.

Bantams are miniatures of the standard breeds, the Buff Cochin Bantam being recommended for hatching game-bird's eggs; the Japanese Bantams are quaint, little creatures with long, sickle-shaped tail-feathers, which are, however, not so exaggerated as those of the Yokohama cocks, which, like the silkies, birds with downy plumage, are grown occasionally for ornament. The gorgeous-hued peacocks and various kinds of pheasants, especially the Ring-necked, Golden, Silver and Reeves pheasants, are raised for their beauty, and the latter for the game market.

Pigeons, too, are an important branch of the poultry farm; the Homer breed being the bird most commonly used for squab raising, as its young reach the desired size very quickly. There are numerous fancy breeds, too, raised by the fanciers, as the Fantails, Pouters, Turbits and Tumblers.

Bronze and Narragansett turkeys are the largest and the hardiest varie-

ties, requiring a large range for their best development. The black and the white, or Holland breeds, being smaller and more domesticated.

The large German white Embden goose, and the dark gray Toulouse breed of French origin, are favorite breeds of geese, although the Canada and Chinese geese are also good.

A Chinese duck, the white Pekin, is the favorite breed of this water-fowl, although the Rouen and Aylesbury types, and even Muscovy, Swedish and the Indian Runners, are grown. The charming little parti-colored Wood-ducks and Mandarin ducks are cultivated for ornament. See also FOWL.

**Poussin, Gaspar**, a French landscape painter; born in Rome, in 1613; died in 1675. His name was Duguet, but he adopted that of his teacher and brother-in-law, Nicolas Poussin. His paintings, distinguished by grandeur and somewhat sombre characteristics, are found in many European galleries.

**Poussin, Nicolas**, distinguished French historical and landscape painter; born at Andelys, Normandy, in 1594; died in Rome in 1665. His style is grand and heroic, and he had a fertile invention. He has been called the French Raphael. Among his celebrated works are the "Seven Sacraments," the "Death of Germanicus," the "Capture of Jerusalem," "Moses bringing Water from the Rock," the "Worship of the Golden Calf," "John Baptizing in the Wilderness," etc., and many fine landscapes.

**Pout**, a young turkey; often applied to the young of other domestic fowls and of the grouse kind; a sea-fish of the cod kind, so named from its power of inflating a membrane which covers the eyes and neighboring parts of the head.

**Powan, or Fresh-water Her-ring**, fish distinctive to Loch Lomond, Scotland, although resembling the Pol-lan of the Irish lakes.

**Powderly, Terence Vincent**, an American lawyer; born in Carbondale, Pa., Jan. 22, 1849. He was General Master-Workman of the Knights of Labor in 1879-1893; then he studied law; and was admitted to the bar in 1894. He was appointed United States commissioner general of immigration in 1897, and chief of Division of Information in Bureau of Immigration

(to distribute immigrants throughout the country) in 1907.

**Powell, Baden**, an English physicist; born in London, Aug. 22, 1796; educated at Oriel College, Oxford; in 1821 became vicar of Plumstead, and in 1824 was made F. R. S. From 1827 till his death, he was Savilian Professor of Geometry at Oxford. He published a history of natural philosophy, treatises on the calculus, optics, and the undulatory theory of light, but he is best known by his contribution on the evidences of Christianity to the "Essays and Reviews" and by other theological works, regarded at the time as dangerously "liberal" in tendency. He died in London, June 11, 1860.

**Powell, John Wesley**, an American geologist; born in Mount Morris, N. Y., March 24, 1834. He was educated at Oberlin College; was a lieutenant-colonel of artillery at the close of the Civil War; Professor of Geology in the Illinois Wesleyan University, 1865; explored the canyon of the Colorado river in 1867 and in 1870-1874. He was director of the United States Geological Survey in 1879-1896, and of the United States Bureau of Ethnology after 1879. The special volumes of reports written by Major Powell are: "Exploration of the Colorado River in 1869-1872"; "Geology of the Uinta Mountains"; "The Arid Regions of the United States"; "Introduction to Study of Indian Languages"; "Canyons of the Colorado," etc. He died Sept. 23, 1902.

**Powell, Thomas**, an American author; born in London, England, Sept. 3, 1809. For many years he was connected with the Frank Leslie publications. He died in Newark, N. J., Jan. 13, 1887.

**Powelson, Wilfred van Nest**, an American naval officer; born in Middletown, N. Y., Sept. 15, 1872; was graduated at the United States Naval Academy in 1893; was selected by the government to pursue a special course in naval architecture at the University of Glasgow, served two years on the flagship "New York," and later on the "Fern." After the destruction of the "Maine" in Havana harbor he was appointed to investigate the disaster. His report showing that the

"Maine" was sunk by an exploded mine was published and favorably commented on by many scientific periodicals. He commanded the gun on the "St. Paul" which sank the "Terror," a Spanish torpedo boat, near San Juan, Porto Rico; promoted lieutenant, 1901; retired, 1902.

**Power**. In mechanics: (1) That which produces motion or force; that which communicates motion to bodies, changes the motion of bodies, or prevents the motion of bodies; a mechanical agent or power. (2) The moving force applied to overcome some force or resistance, to raise a weight, or produce other required effect; air, water, steam and animal strength are employed as powers. (3) The mechanical effect or advantage produced by a machine. Force or effect considered as resulting from the action of a machine.

**Powers, Hiram**, an American sculptor; born in Woodstock, Vt., July 29, 1805. In 1835 he went to Washington, where he executed the busts of several distinguished persons. Two years later he was enabled to go to Italy to study his art, and he resided in Florence till his death. There he produced his statue of "Eve," which excited the admiration of Thorwaldsen, and in 1843 the still more popular "Greek Slave," of which six copies in marble, with cast copies innumerable, were produced. Among the other works the chief were "Proserpine," "Il Penseroso," "California," "America," and busts of Washington for the State of Louisiana, of Calhoun for South Carolina, and Daniel Webster for Boston, as well as those of John Q. Adams, Andrew Jackson, Marshall, Van Buren, and other distinguished Americans. He died in Florence, Italy, June 27, 1873.

**Powers, Horatio Nelson**, an American poet; born in Amenia, N. Y., April 30, 1826. He died in Piermont, N. Y., Sept. 6, 1890.

**Powers, Le Grand**, an American statistician; born in Preston, N. Y., in 1874; was graduated at Iowa State University in 1872; commissioner of labor in Minnesota in 1891-1899; then became chief statistician of the 11th Census, in charge of agriculture. Among his books are "Minnesota Bu-

reau of Labor Biennial Reports" "Farmer Hayseed" (a reply to Coin's "Financial School"); etc.

**Powhatan**, an Indian chief; born about 1550; was the father of Pocahontas, who is celebrated in the colonial history of Virginia as the rescuer of John Smith. He died in April, 1618.

**Powhatan**, the name of an Indian confederacy, which at an early day lived on the E. shore of Virginia and a portion of Maryland. They at first numbered only seven tribes, but under the leadership of their chief, Powhatan, increased to 30. The English found them when forming the colony at Jamestown. Constant troubles between the confederacy, the English, and the Iroquois, soon destroyed nearly all the Powhatan tribes, and after 1684 they were not recognized as a separate nation.

**Poynter, Sir Edward John**, an English painter; born in Paris, March 20, 1836. Among his chief pictures are "Perseus and Andromeda"; "More of More Hall and the Dragon"; "Zenobia Captive," and "A Roman Boat Race." He was elected an Associate in 1869 and a Royal Academician in 1876, was the first Slade Professor of Art at University College, London, and was director for art at South Kensington for some years. He was also the author of "Ten Lectures on Art" (1879). He became president of the Royal Academy and was knighted in 1896. D. 1919.

**Praefect**, a common name applicable to various Roman functionaries. The most important was the Praefectus urbi, or warden of the city, whose office existed at an early period of Roman history, but was revived under Augustus, with new and greatly altered and extended authority, including the powers necessary for the maintenance of peace and order in the city, and an extensive jurisdiction civil and criminal. The title is used for certain public officials in France. The American word "chief" seems to be its equivalent.

**Prætor**, originally the official title of the Consuls at Rome. When the patricians were compelled to acquiesce in the consulship being thrown open to the plebeians, they stipulated

that a new curule magistrate should be appointed from the patricians exclusively, to act as supreme judge in the civil courts. On this magistrate the title of prætor was bestowed.

**Prætorian Guard**, a body of permanent troops, established by Augustus as Imperial Life Guards, in imitation of the bodyguard attached to the person of the Commander-in-Chief of a Roman army. The prætorian guards were kept up by successive emperors, and, being under special organization and enjoying several privileges, they became in time so powerful that they were able to raise and depose emperors at their will. They were reorganized by Septimius Severus, and were finally suppressed by Constantine the Great.

**Pragmatic Sanction**, a rescript or answer of the sovereign delivered by advice of his council to some college, order, or body of people, on any case of their community. Generally it is applied to an ordinance fixing the succession to a throne in a certain line. Thus, by the Pragmatic Sanction of Germany in 1439, the succession of the empire was made hereditary in the house of Austria.



PRAIRIE CHICKEN.

**Prague**, the capital of Republic of Czechoslovakia created in Oct., 1918; situated at the base and on the slope of the hills which skirt both sides of the isletted Moldau; 217 miles N. N. W. of Vienna and 118 S. S. E. of Dresden. It offers a highly picturesque appearance from the beauty of its site, and the numerous lofty towers (more than 70 in number) which



rise above the many noble palaces, public buildings, and bridges of the city. The fortifications have been gradually demolished since 1866. The royal Burg, on the Hradschin (240 feet), the ancient residence of the Dukes of Bohemia, dates mainly now from the 16th and 17th centuries, and has 440 rooms. Prague has, besides, numerous public gardens and walks in the suburbs, with several royal and noble parks open to the public in the vicinity of the city. The university had 10,000 students at the beginning of the 15th century; but subsequently it had a long period of inactivity. It received a new constitution in 1881, having now two coördinate sides or sections, one German and one Czech, with respectively 156 and 140 teachers, and 1,470 and 2,361 students. It possesses a library of 195,000 volumes and 3,800 manuscripts, a fine observatory, museums of zoölogy and anatomy, a botanical garden, etc. The manufactures include machinery, chemicals, leather, cotton, linen, gloves, beer, spirits, etc. Prague is the center of the commerce of Bohemia, and of an important trade. Pop. (1921) 676,657.

**Prairie**, the name given by the early French settlers in America to extensive tracts of land, either level or rolling, destitute of trees, and covered with coarse tall grass, interspersed with numerous varieties of flowering plants.

**Prairie Chicken**, the popular name of the pinnated grouse of the United States. The neck of the male is furnished with tufts of 18 feathers, and is remarkable also for two loose, pendulous, wrinkled skins, which somewhat resemble an orange on inflation. The prairie hen is much prized for the table.

**Prairie Dog**. It is not even related to the dog, but is so called from the fancied resemblance of its cry to the bark of a small dog, whence it has been also called the barking squirrel. It is about a foot long, reddish-brown above, lighter beneath. Its habits are eminently social; it forms large communities on the prairies, each burrow having a little hillock at its entrance, and excavated passages connect the burrows, which are sometimes shared by the burrowing owl.

The rattlesnake occasionally occupies a deserted burrow, and preys largely on the prairie dog.



PRAIRIE DOG.

**Prairie State**, Illinois. The face of the State is mostly a level tableland, elevated from 300 to 800 feet above the sea.

**Prairie Wolf**, or **Coyote**, the small wolf which is found on the prairies in North America. It is a cowardly animal, and only dangerous to man when in packs and pressed by hunger.

**Pratt, Charles**, an American philanthropist; born in Watertown, Mass., Oct. 2, 1830. He amassed a great fortune, took an intense interest in educational matters, and founded in Brooklyn the Pratt Industrial Institute. He died in New York city, May 4, 1891.

**Pratt, John Francis**, an American scientist; born in Pomfret, Vt., June 18, 1848; was graduated at Dartmouth College in 1871; then studied civil engineering. In 1871 he became connected with the United States Coast and Geodetic Survey, in which he was made an assistant in 1884; commanded the United States schooner "Yukon" in Puget Sound and the Straits of Fuca, Wash., in 1884-1890; led the expedition to Chilcoot, Chilkat, Skagway, and Dyea to determine the S. E. boundary of Alaska; conducted an expedition to the E. side of Bering Sea and the lower portion of the Yukon river in 1898; and served on numerous other important missions.

**Prawn**, in zoölogy, *Palaemon serratus*, and, less properly, any other species of the genus. Its ordinary



length is about four inches; color bright gray, spotted and lined with darker purplish gray. It is a favorite article of food, and is found in vast numbers in the North Atlantic.

**Praxiteles**, a celebrated Greek sculptor; born about 360 B. C., who executed several fine statues in bronze and marble of Bacchus, a satyr, Venus, and Apollo. An ancient copy of one of his works, the "Apollo Saur-octonos," is the only example extant. He excelled by the grace, tenderness, and finish of his works. He was esteemed as second to Phidias only. He died about 280 B. C.

**Prayer**, a universally acknowledged part of the worship due to God; not merely petition, but, according to the New Testament models and Christian usage, praise, adoration, and thankful acknowledgment of mercies received. Nor is any truth more indisputably taught in the Bible, or more frequently brought into view, both in the Old and New Testament, than that God is the hearer of prayer.

**Praying Machine, Praying Mill, or Praying Wheel**, an apparatus used in Tibet, and other parts of the East, as a mechanical aid to prayer. They are of various forms, the commonest being a cylinder or barrel of pasteboard fixed on an axle, and inscribed with prayers. The devout give the barrel a turn, and each revolution counts as an utterance of the prayer or prayers inscribed. It is common enough to see them fixed in the bed of a running stream, as they are then set in motion by the water, and go on praying night and day, to the special benefit of the person who has placed them there. The Tartars also suspend them over their domestic hearths, that they may be set in motion by the current of cool air from the opening in the tent, and so twirl for the peace and prosperity of the family.

**Preaching**, the act of preaching; a public religious discourse. The modern system of preaching was unknown in the early Church. The general mode then was for the priest to read portions of the Old or New Testament, and explain or enforce the precepts which they contained. About the 13th century, the scholastic divines directed their chief attention to the study of the sacred Scriptures, and

were hence called Bible divines, and honored with the pompous titles of profound, sublime, wonderful, seraphic, angelic doctors. They introduced a new and artificial mode of preaching, called declaring. Before this time, the clergy generally adopted postulating, or expounding a large portion of Scripture, sentence by sentence. By the new method the preacher read a text out of some book and chapter of the Old or New Testament, dividing it into several parts and expounding them; and, generally, the more numerous the divisions and sub-divisions, the better and more highly was he esteemed. The opposition to this textual mode of preaching continued for upward of a century, but at length it came generally to prevail.

**Preble, Edward**, an American naval officer; born in Portland, Me., Aug. 15, 1761. Early in 1803 he was made commander of the "Constitution"; and in June of that year was placed in command of a fleet sent against Tripoli. He greatly distinguished himself in causing that country to sue for peace, a feat accomplished by a number of skillful bombardments. He returned to the United States and received through Congress the thanks of the nation and a gold medal. He died in Portland, Me., Aug. 25, 1807.

**Precedence**, the order in which men and women follow each other according to rank or dignity in a State procession or on other public occasions. There is no American law dealing with precedence, tact and courtesy guiding the procedure on public occasions, but in Europe it is a subject of very grave importance, and moss-grown with law and custom.

**Precedent**, a judicial decision, interlocutory or final, which serves as a rule for future determinations in similar cases; also a form of proceeding to be followed in similar cases.

**Precentor**, an officer in a cathedral, formerly sometimes called chaunter, and ranking in dignity next to the dean.

**Procession of the Equinoxes**, in astronomy, the going forward of the equinoxes. The arrival of the sun at the point Aries a little earlier than he might be expected to reach it was first observed by Hipparchus about 150

**B. C.** The earth's rotation simply causes the points at which the earth's equator intersects the plane of the ecliptic to move slowly in a direction opposite to that in which the earth rotates. This is what is denominated the precession of the equinoxes. It is generally associated with the sun, but the moon is twice as potent in producing it; owing to her comparative nearness to the earth she is able to produce a greater differential effect on the nearer and more remote portions of our planet. The annual motion of the first point of Aries is about 50", and about 25,867 years will be required for the entire revolution. It has been supposed that the precession of the equinoxes may have had some influence in producing the Glacial Period.

**Predestination**, in theology, the term used to denote the decree of God, whereby the elect are foreordained to salvation. The theory of predestination represents God's absolute will as determining the eternal destiny of man, not according to the foreknown character of those whose fate is so determined, but according to God's choice. It is a characteristic of Calvinistic theology; left an open question since the Reformation by Episcopal and Roman Catholic Churches.

**Preemption**, the act or right of buying before others. Also, the right of a settler on lands to purchase in preference to others, when the land is sold.

**Preexistence**, existence previous to or before something else. Also, existence in a previous state; existence of the soul previous to its union with the body. Preexistence was a doctrine of the Pythagoreans, and several others of the old philosophers, and is still found in many Eastern religions.

**Prelate**, an ecclesiastical dignitary of the highest order, having authority over the lower clergy, as an archbishop, bishop, or patriarch; a dignitary of the church.

**Prentice, George Denison**, an American journalist; born in Preston, Conn., Dec., 18, 1802; became editor of the Louisville "Journal," 1830, and held that post till his death, making the paper famous for satiric wit and exuberant fun. He died in Louisville, Ky., Jan. 22, 1870.

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**Prentiss, Benjamin Mayberry**, an American military officer; born in Belleville, Va. (now W. Va.), Nov. 23, 1819. He removed to Illinois in 1842, and served in the Mexican War as a captain of volunteers. At the beginning of the Civil War he entered the Union Army and was made Brigadier-General of volunteers. He was taken prisoner at Shiloh, May 6, 1862; was promoted Major-General in the same year; defeated Generals Holmes and Price, who attacked him at Helena, Ark., July 4, 1863; resigned his commission Oct. 28, 1863, and died in 1901.

**Prentiss, Mrs. Elizabeth (Payson)**, an American writer of fiction; born in Portland, Me., Oct. 26, 1818. She died in Dorset, Vt., Aug. 13, 1878.

**Prentiss, Seargent Smith**, an American orator; born in Portland, Me., Sept. 30, 1808; studied law, and became, about 1827, a resident of Vicksburg, Miss., where he practised with success. He was elected to Congress by the Whigs in 1837. His manner of speaking was at once natural and dramatic, and he had a high reputation as an orator, and as an advocate in jury trials was equal or superior to any lawyer in the Southwestern States. He died near Natchez, Miss., July 1, 1850.

**Preposition**, a part of speech, so named because originally prefixed to the verb, in order to modify its meaning.

**Presburg (Hung. Pozsony)**, a town of the Republic of Czechoslovakia on the Danube river, close to the Austrian frontier and 40 miles E. by S. of Vienna. The most notable building is the Cathedral, a Gothic edifice dating from the 13th century, in which the Kings of Hungary used to be crowned. The town has considerable trade in corn, sheep, cattle, swine, and wine, and manufactures beer, dynamite, wire, starch, spirits, and candy. It was a prominent town as far back as the 11th and 12th centuries; was the conference place of the rulers of Austria and Hungary, was the capital of Hungary in 1541-1784. Napoleon here concluded the treaty after the battle of Austerlitz, in 1805. Pop. 93,159.

**Presbyter**, an elder, or a person advanced in years who had authority

in the early Christian Church (I Peter v: 1). Also, in the Presbyterian Church, a member of a presbytery; specifically, a minister.

**Presbyterian Church**, a name applied to those Christian denominations, who hold that there is no order in the Church as established by Christ and His apostles superior to that of presbyters, and who vest church government in presbyteries, constituted of ministers and elders, possessed of equal powers thus without superiority among themselves. Presbyterianism does not recognize the term bishop as the superior of the presbytery, because these two names or titles in the New Testament are used interchangeably of the same persons. Presbyterians hold that the authority of their ministers is derived from the Holy Spirit, which is symbolized by the imposition of the hands of presbytery collectively. They affirm that all Christian ministers, being ambassadors of Christ, are equal by their commission. The congregation elects its own minister and elders, and also its deacons and trustees—the former of the last two takes charge of the charities of the church, and the latter of its temporal or financial affairs. The session, consisting of the minister and elders, has the spiritual oversight of the church members. The Presbytery is constituted by ministers and elders in equal numbers. A congregation for the time without a pastor can be represented in the presbytery by an elder. An appeal may be made to the presbytery from congregations or sessions. A synod consists of a number of presbyteries within defined boundaries. The General Assembly is the highest court of the church, and consists of representatives from all the presbyteries; each minister is accompanied by an elder from the same presbytery.

The first Presbyterian Church in modern times was founded in Geneva by John Calvin, about 1541; and the constitution and doctrines were thence introduced, with some modifications, into Scotland by John Knox, about 1560, though the Presbyterian was not legally recognized as the national form of church government till 1592.

The first Presbyterians in America were emigrants from the British Isles, and the first Presbyterian church in

America was founded in the colony of Massachusetts in 1629. It was the outgrowth of a Presbyterian congregation that landed there in 1625. This movement was projected by Presbyterian leaders in the S. of England and also in London. It was designed to be a colonization on a higher principle than the desire for gain.

In 1903 a movement for the revision of the Confession of Faith came to a successful close, and in 1907 the union of the Cumberland Presbyterian Church with the Presbyterian Church in the United States of America was consummated. There are several branches which virtually hold the polity of the Presbyterian Church in the United States, each having its own theological seminaries, colleges, organs, etc.

In May, 1927, the following statistics were reported for the Presbyterian Church in the United States: 9,661 ministers, 48,916 elders, 20,908 deacons, 9,497 churches, and 1,927,268 communicants. There were 1,569,515 Sunday School members. There were also 56 colleges and 13 theological seminaries. In the same year it was estimated that \$62,782,907 were spent for all purposes in the church; \$5,093,460 went for national missionary work; \$3,924,903 for foreign missionary work, \$1,681,721 for Christian education, and \$46,612,753 for congregational expenses.

**Presbytery**, in the Presbyterian Church, a court of judicature above the session and beneath the synod. It is composed of all the ministers of an assigned district, with a representative ruling elder from each. These elders hold office for six months, and are capable of reelection. Professors of theology are members of that presbytery in which the college is situated. The moderator opens and closes each meeting with prayer. The functions of the court are executive, not legislative. The presbytery supervises all the congregations within its bounds, hears appeals from the decisions of sessions, examines candidates for the ministry, licenses probationers, and ordains ministers by laying on of hands (I Tim. iv: 14). Appeal lies from it to the synod.

**Frescott, William Hickling**, an American historian; born in Salem,

## Prescription

Mass., May 4, 1796, the son of a distinguished lawyer and statesman, and grandson of Col. William Prescott, an officer of the Independence War. He entered Harvard College in 1811, and graduated in 1814. While at college he had the misfortune to lose by an accident, the sight of one of his eyes, while the other became so weakened as to deter him from any profession or pursuit in which strong eyesight was indispensable. His first literary works were a series of critical papers in the "North American Review." These were followed in 1838 by his first great work, a history of the reign of Ferdinand and Isabella, produced after ten years of the most arduous labor. It was received with the utmost enthusiasm both in America and England; while Germany, France, and Spain acknowledged the new historian by translating his work into their respective languages; and the Spanish capital elected him a member of her Royal Academy of History.

Stimulated by success, and with his skill considerably increased by practice and experience, Prescott set about the composition of "The Conquest of Mexico," which he published in 1843, and four years later he gave to the world "The Conquest of Peru." These elaborate and charmingly written works, like their predecessor, were received in both hemispheres with immense applause. He later began the composition of what he intended to be the greatest achievement of his latter years, "The History of Philip II." Of this work two volumes appeared in 1855, and a third in 1859; and the world was looking forward to the completion of the task, when he was suddenly attacked by paralysis. He died in Boston, Jan. 28, 1859.

**Prescription**, in law, a claim or title to a thing by virtue of immemorial use, enjoyment, the right or title acquired by such use or by possession had during the time, and in the manner fixed by law, as a right of way, of common, or the like.

**Presentment**, in law, a very comprehensive term; including not only presentments properly so called, but also inquisitions of office and indictments by a grand jury. Properly speaking, it is the notice taken by a grand jury of any offense from their

## Presidential Succession

own knowledge or observation, without any indictment laid before them at the suit of the crown; as the presentment of a nuisance, a libel, and the like; upon which the officer of the court must afterward frame an indictment, before the party presented can be put to answer it. In commerce, the presenting a bill of exchange to the drawee for acceptance or to the acceptor for payment.

**President, The**, an American frigate, the flagship of Capt. John Rodgers in the early part of the War of 1812. It was a sister ship of the "Constitution" and the "United States." It defeated the British ship "Endymion" on Jan. 15, 1815, but was obliged to surrender to her consorts. The name also of an American steamer which sailed from New York for Liverpool, March 21, 1841. It was sighted on the 24th, but was never seen again.

**President of the United States**, the chief executive of the government. He is Commander-in-Chief of the army and navy of the country, and has the nomination of most of the executive officers of the government, besides a large number of judicial and administrative functionaries. He is elected for a term of four years, and is eligible for any number of reëlections, though, in conformity with the precedent set by George Washington, no President has yet been elected more than twice. The President has a veto power, and unlimited pardoning prerogative as to offenders against National laws. His salary is \$75,000 a year, and his residence, during his presidency, is the White House in Washington. He is elected by an electoral college. In case of his death or total disability the functions of the office devolve on the Vice-President, who is elected coincidentally with the President, and is the presiding officer of the Senate.

**Presidential Succession**, the order in which a vacancy in the office of the President of the United States can be filled pending a new election. The 49th Congress passed a measure entitled "An Act to provide for the performance of the duties of the office of President in the case of removal, death, resignation, or inability both of the President and Vice-President."

According to its provisions the presidential succession is arranged as follows: Following the Vice-President, the Secretary of State, the Secretary of the Treasury, the Secretary of War, the Attorney-General, the Postmaster-General, the Secretary of the Navy, the Secretary of the Interior, Secretary of Agriculture, and the Secretary of Commerce.

**Preston**, a municipal and parliamentary borough of England, in Lancashire; 27 miles N. E. of Liverpool, on a height above the right bank of the Ribble. Three notable buildings are Christ Church of Norman architecture, the parish church in the decorated style of the 14th century, and St. Walburga's (R. C.). The borough is one of the chief centers of cotton manufacturing; has also machine shops, iron and brass foundries, breweries, tanneries, and railroad car shops; and is an important trading port. Robert Bruce burned the place in 1323, the Parliamentarians twice captured it in the Civil War, the Jacobites occupied it in 1715, and Arkwright was born here in 1732. Pop. (1926 Est.) 124,200.

**Preston, Harriet Waters**, an American author; born in Danvers, Mass., about 1843. At an early age she became noted as a linguist, and afterward achieved a brilliant reputation as a translator from the Latin and Provençal languages, and as an essayist. Besides her translations she has published several bright original books. She died in 1911.

**Preston, William**, an American diplomatist; born near Louisville, Ky., Oct. 16, 1816; practiced law in Louisville; was sent as minister to Spain in 1858; was a member of Congress 1852-1855; joined the Confederates in 1861; and was made a Brigadier-General. He died in Lexington, Ky., Sept. 21, 1887.

**Presumption**, in law, in the absence of direct evidence that which comes nearest to the proof of a fact.

**Pretender**, one who made claim to a throne under a pretense of right (as Perkin Warbeck, Lambert Simnel, in English history); specially applied to the son and grandson of James II., the heirs of the House of Stuart, who laid claim to the throne of England, from which they had been excluded by Par-

liament in 1688. The former, often termed the Old Pretender, died in 1776; his son, Charles Edward Stuart, the Young Pretender, in 1788.

**Pretoria**, the capital of the former South African Republic (Transvaal), 980 miles from Cape Town, and 285 miles W. of Lorenzo Marques, on Delagoa Bay, to which a railway was opened in 1895. Pretoria was founded in 1855 by the Boer leader Pretorius, has broad streets, and pure water. It owes its prosperity chiefly to the gold mines at Johannesburg, 30 miles distant. Pop. whites (1926 Est.) 89,400.

**Prevost-Paradol, Lucien Anatole**, a French writer and diplomatist; born in Paris, France, Aug. 8, 1829. In 1851 he obtained from the Académie Française the prize for eloquence, for his "Eulogy on Bernardin de Saint Pierre." His literary and political essays are among the soundest, the most acute, the most scholarly, and the most elegant that have proceeded from the French journalists of the empire. In 1870 he came to the United States as minister plenipotentiary, and he was at Washington only a few days when he committed suicide, Aug. 11, 1870.

**Priam**, a King of Phrygia, and the last sovereign of Troy. Soon after his accession, the discovery of a gold mine in his kingdom enabled him to enlarge and beautify his capital, strengthen its defenses, and raise a powerful army. Under his reign Troy was regarded as the largest, richest, and most magnificent city, and himself as the most powerful monarch in Lesser Asia. The perfidy of his son Paris in eloping with Helen led to the long and fatal war, which, after enduring for 10 years, terminated in the entire overthrow of the state, the destruction of Illium, the death of most of his sons, and his own murder by the ruthless Pyrrhus. Priam's death occurred about 1184 B. C.

**Pribilof Islands**, a group of islands on the coast of Alaska, in Bering Sea. The largest are St. Paul, St. George, Walrus, and Beaver Islands. They are frequented by numbers of fur seals. The natives are Aleutians.

**Price, Richard**, an English philosopher; born in Tynton, Glamorgan-shire, Feb. 22, 1723. He was a Dissenting minister, and was pastor of



a congregation at Hackney. He was the friend of Benjamin Franklin, and sympathized warmly with the American colonists. His tables of vital statistics and calculations of expectancy of life were the basis of modern annuities and life insurance; his economic and financial writings were of a high order, and the younger Pitt consulted him on finance. He wrote "The American Revolution and the Means of Rendering It a Benefit to the World," etc. He died April 19, 1791.

**Price, Sterling**, an American military officer; born in Prince Edward co., Va., Sept. 11, 1809; received a collegiate education, and settled in Missouri in 1831; was elected to Congress in 1844; served in the Mexican War as colonel and Brigadier-General of volunteers; was military governor of Chihuahua in 1847; governor of Missouri in 1853-1857, and president of the State Convention in February, 1861. When the Civil War broke out he joined the Confederate army, and became Major-General of Missouri militia in May, 1861. He fought through many campaigns and greatly distinguished himself; was commander of the Department of the West in 1862, and afterward of the districts of Tennessee and Trans-Mississippi. At the close of the war he went to Mexico, but in 1866 returned to Missouri. He died in St. Louis, Mo., Sept. 29, 1867.

**Prickly Ash**, a name given to several prickly shrubs of the United States. They have an aromatic and pungent bark, which from being used as a remedy for toothache gains them the name of toothache tree.

**Prickly Heat**, a skin disease, characterized by minute papulæ formed by the hyperæmia of the sweat follicles. Few Caucasian residents of the tropics escape it when they are exposed to the sun. It is not in the least dangerous.

**Prickly Pear**, otherwise called the Indian fig. It is a fleshy and succulent plant, destitute of leaves, covered with clusters of spines, and consisting of flattened joints inserted upon each other. The fruit is purplish in color, covered with fine prickles, and edible. The flower is large and yellow. It is a native of the tropical parts of America. It is easily propagated, and in some countries is used as a hedge

plant. It attains a height of seven or eight feet.

**Pride of China** (also called pride of India and bead tree), a handsome tree a native of India, naturalized in the Southern States of the American Union. It grows rapidly, has large bunches of flowers, and enormous quantities of small fruit. A decoction of the bark of its root is used as a vermifuge.

**Priest**, one who in any religion performs the sacred rites and, more or less, intervenes between the worshipper and his God, especially by offering sacrifice.

In Judaism, a descendant of Aaron, and therefore one of the sacred caste. The Jewish priests filled all the important offices in connection, first with the tabernacle and then with the temple worship. In the Protestant Episcopal Church, a clergyman in priest's orders, as distinguished from a deacon. In the Roman Church, a cleric who has received the third grade in holy orders, and who is thereby empowered to "offer, bless, rule, preach, and baptize."

**Priest, Josiah**, an American author; born in New York, about 1790. He was an unschooled man, a harness-maker by trade; but published several books, some of which became very popular. Among them were, "Stories of the Revolution," and "Slavery in the Light of History and Scripture." He died about 1850.

**Priestley, Joseph**, an English natural philosopher; born in Fieldhead, England, March 13, 1733. His first publication was the "History and Present State of Electricity," which procured his election into the Royal Society, and the degree of doctor of laws from Edinburgh. It was here also that his political opinions were first manifested, in an "Essay on Government." Soon after this he went to Leeds, where he made those important discoveries with regard to the properties of fixed air, for which he received the Copley medal of the Royal Society in 1772. In 1776 he communicated to the same learned body his observations on respiration, in which he first experimentally ascertained that the air parts with its oxygen to the blood as it passes through the lungs. He next re-

moved to Birmingham, where he became once more minister of an independent congregation, and occupied himself in his "History of the Corruptions of Christianity," writing, also, in support of the claims of the Dissenters for a repeal of the test acts. But it was the French Revolution that afforded him the widest field, and he did not fail to display his warm sympathy with it. This excited the indignation of the High Church party; and in the riots which took place in July, 1791, his house, library, manuscripts, and apparatus were committed to the flames by the mob, and he was exposed to great personal danger. After this he removed to Hackney, where he succeeded Dr. Price; but, in 1794, compelled by incessant persecutions to fly his intolerant country, came to the United States and took up his abode at Northumberland, Pa. His works extend to between 70 and 80 volumes. As a natural philosopher, his fame principally rests on his pneumatic inquiries. He died in Northumberland, Pa., Feb. 6, 1804.

**Prima Donna**, the first female singer in an opera.

**Primate**, the chief ecclesiastic in certain churches. The Archbishop of York is called the Primate of England, the Archbishop of Canterbury the Primate of All England, and the Roman Catholic Archbishop of Baltimore the Primate of the United States.

**Primates**, the first and chief of Linnæus' orders of the class Mammalia. He included under it four genera: *Homo* (one species, five varieties), *Simia* (21 species), *Lemur*, (three species), and *Vespertilio* (seven species). Huxley divides it into three suborders: (1) *Anthropidæ*, (2) *Simiæ* (apes and monkeys), and (3) *Lemuridæ*.

**Prime, Samuel Irenæus**, an American editor; born in Ballston, N. Y., Nov. 4, 1812; was first a minister in the Presbyterian Church. About 1840 he became editor of the New York "Observer," and remained in charge till his death. He was the author of over 40 volumes, the best known being, "Travels in Europe and the East," "Letters from Switzerland," "The Alhambra and the Kremlin," "Life of Samuel F. B. Morse."

He died in Manchester, Vt., July 18, 1885.

**Prime, William Cowper**, an American author; born in Cambridge, N. Y., Oct. 31, 1825. He has written "Owl Creek Letters," "Coins, Medals, and Seals," "The Holy Cross," "Pottery and Porcelain of all Times and Nations," etc. He edited "McClellan's Own Story," and other works. He died Feb. 13, 1905.

**Prime Meridian**, that meridian from which longitude is measured; in the United States the meridian of Washington.

**Prime Minister**, a British officer of State, who at the summons of the sovereign has succeeded in forming an administration, of which he is the head, and which may be named after him. Though each member of the ministry administers his own department independently of his colleagues, all important departmental matters are submitted to him, the most important being brought before the whole ministry, and no appointment of moment is made or recommended to the crown without his knowledge and concurrence. His own patronage is very extensive. No cabinet officer in the United States possesses similar powers.

**Primitive Methodists**, a section of the Wesleyan community which arose in Staffordshire, England, under the leadership of Hugh Bourne (1792-1852). Having held camp meetings like those in the United States, he was censured for it by the English Wesleyan Conference in 1807, and, seceding, formed a new connection. In doctrine the Primitive Methodists agree with the Wesleys. In the United States they reported (1915) 94 churches, 74 ministers, and 8,400 communicants.

**Primogeniture**, the right, system, or rule under which in cases of intestacy, the eldest son of a family succeeds to the real estate of his father to the absolute exclusion of the younger sons and daughters. Primogeniture no longer carries with it any legal advantage over younger children in the United States.

**Primrose**, a well known flower, common in copses, pastures, hedgebanks, and woods, or by the side of streams. Its rootstock is emetic.

**Prince.** (1) One who holds the first, or chief place, or rank; a sovereign. (2) The ruler or sovereign of a state or territory which he holds of a superior, to whom he owes certain services. (3) The son of a sovereign, or the issue of the royal family; as, the princes of the blood. In British heraldic language, the title of prince belongs to dukes, marquises, and earls of Great Britain, but in ordinary use it is confined to members of the royal family. The only case in which it is a territorial title is that of the Prince of Wales, the official title of the heir-apparent to the throne. On the Continent of Europe the title of prince is borne by members of families not immediately connected with any royal house. It is frequently borne by persons who although legally entitled to it are in fact without means of support, and it can be purchased in some European countries for a comparatively small sum of money. (4) The head or chief of any body of men; one who is at the head of any class or profession, or who is preëminent in anything; as, a merchant prince.

**Prince, Le Baron Bradford,** an American lawyer; born in Flushing, L. I., N. Y., July 3, 1840; was chief-justice of New Mexico in 1878-1882; territorial governor of New Mexico in 1889-1893; president of the International Mining Congress in 1897-1898 and in 1900-1901; and vice-president of the National Irrigation Conference in 1901. He is the owner of the largest collection of American stone idols in the world. His publications include various books and pamphlets on archaeology, political economy, and history.

**Prince Edward Island,** an island forming a province of the Dominion of Canada, in the Gulf of St. Lawrence, and separated by Northumberland Strait from New Brunswick on the E. and Nova Scotia on the S.; greatest length, from E. to W., about 130 miles; breadth, varying from 4 to 34 miles; area, about 2,184 square miles, or 1,365,760 acres, of which over 1,000,000 are under cultivation. Pop. (1929) 86,100. The coast line presents a remarkable succession of large bays and projecting headlands. The island is naturally divided into three peninsulas, and the whole is eminently

agricultural and pastoral, the forests now being of comparatively limited extent. The climate is mild; winter, though long and cold, is free from damp, unwholesome chills; and summer, without being oppressively hot, is fitted to promote the growth of all the ordinary cereals. Sheep, cattle, and horses are reared in numbers; cod, mackerel, herring, oysters, and lobsters form the most productive part of the fisheries. The manufactures are chiefly confined to linen and flannels for domestic use; there are also several tanneries, and shipbuilding is carried on to a considerable extent. The exports consist of timber, agricultural produce, and live stock; the imports of drygoods, hardware, cordage, iron, etc. A railway runs from one end of the island to the other. The capital is Charlottetown. Pop. (1929) 14,000. There is an excellent educational system, the elementary schools being free. The island is supposed to have been discovered by Cabot. It was first colonized by France, captured by Great Britain in 1745, restored and recaptured, and finally in 1873 was admitted to the Dominion of Canada.

**Princeton,** a town in Mercer county, N. J.; on the Delaware & Raritan canal and a spur of the Pennsylvania railroad; 10 miles N. E. of Trenton; is widely noted as the seat of Princeton University, the Princeton Theological Seminary, and the home of Grover Cleveland; for a battle that took place at Stony Brook, about 3 miles W. of the town, during the Revolutionary War, in which the Continental army was victorious; and as the place where Washington received the thanks of the young nation for his conduct of the war to a successful termination. Pop. (1930) 6,992.

**Princeton Theological Seminary,** an educational institution in Princeton, N. J.; founded in 1812, under the auspices of the Presbyterian Church.

**Princeton University,** an educational institution in Princeton, N. J. It was founded Oct. 22, 1746, by a charter given under the seal of the Province of New Jersey, "for the instruction of youth in the learned languages and in the liberal arts and sciences." After the Civil War the college began

to make rapid progress. The number of students increased, the faculty was enlarged, and in 1872 the Chancellor Green Library (named in honor of its donor) was erected. Up to this time the course of instruction had led exclusively to the degree of Bachelor of Arts; but in 1873 the John C. Green School of Science was added, and in 1875 the Department of Civil Engineering was also created. In 1889 the Department of Electrical Engineering was founded, and in 1901 the Graduate School was formally established, Prof. Andrew West being appointed its dean.

On Oct. 22, 1896, the 150th anniversary of the signing of the first charter, the title of Princeton University was assumed. In 1897 the Chancellor Green Library was connected with a new library building having a capacity to shelve 1,200,000 volumes. In 1924 it had 270 professors and instructors, 2,448 students, 383,674 volumes in its libraries, grounds and buildings valued at \$7,395,920, and \$5,562,750 in endowment funds.

**Printing**, the art of producing impressions from characters or figures on paper or any other substance. Printing is of comparatively modern origin, only 400 years having elapsed since the first book was issued from the press; yet we have proof that the principles on which it was ultimately developed existed among the ancient Assyrian nations. Printing from movable types was, according to Professor Douglas, probably practiced in China as early as the 12th or 13th century, as there are Korean books printed from movable clay or wooden types in 1317. The great discovery was that of forming every letter or character of the alphabet separately, so as to be capable of rearrangement and forming in succession the pages of a work, thereby avoiding the labor of cutting new blocks of types for every page. The credit of inventing this simple yet marvelous art is contested by the Dutch and Germans. Printing was brought to England in 1476 or 1477 by William Caxton. The first printing press set up in America was introduced by the Viceroy of Mexico, Antonio de Mendoza, and the first book printed by it in the New World was "The Ladder de S. Juan Climaco" (1536).

The earliest press in the British-American colonies was brought over for Harvard College in 1638, and was set up by Stephen Daye. The "Bay Psalm Book" (1640) was its first important work; but in 1639 it printed the "Freeman's Oath" and an almanac. In Philadelphia a press was set up in 1685, in New York in 1693.

There are three processes attendant upon the art of printing, viz., composition or typesetting, make-up or imposition, and press work or the actual printing. Most printing is done from sheets but newspapers with large circulation print from rolls, which, after being printed, is cut into sheets and folded.

In 1925 it was estimated that there were engaged in printing and publishing and their allied industries, 22,725 establishments, employing 296,423 wage earners, paying \$502,114,078 for wages, \$673,985,171 for materials, including fuel, power and mill supplies, and yielding products having a combined value of \$2,482,065,950.

Publishing and printing alone had 21,056 plants, with 251,272 wage earners, paying \$438,832,974 for wages, \$610,058,696 for materials, and yielding products having a combined value of \$2,269,638,230.

Newspapers and periodicals was the most important branch of this industry with 10,625 plants, 117,001 wage earners, paying \$217,540,967 in wages, and \$379,540,602 for materials, and yielding products valued at \$1,447,661,177.

Book and job printing with 10,322 plants, 133,316 wage earners, paying \$219,830,346 for wages, \$228,689,864 for materials, and yielding products valued at \$806,887,417.

Music ranked third with 109 plants, 955 wage earners, paying \$1,461,661 for wages, \$1,828,230 for materials, and yielding products valued at \$15,089,636.

Other associate industries are book-binding and blank-book making; engraving, steel and copper-plate and plate printing, and lithographing. The latter production reached a total in 1925 valued at \$98,721,268.

The 19th was a century of wonderful achievement in every branch of printing. The Fourdrinier paper-making machine, the Bruce type-caster, the

## Prison

linotype type-casting and type-setting machine, and other mechanical type-setters of merit; composition ink rollers, the cylinder press, the web press, and mechanisms of many kinds for the rapid printing of the smallest label or the largest sheet in black or many colors; machines for folding, sewing, and binding books; the arts of stereotype, electrotype, and photo-engraving—all these are its outgrowth, and the more important have been invented or made practicable within the memory of men now living. It is a summary of which the printing trade may be proud. Printing was never done better and never done worse. It has never been furnished in so large a quantity at so small a price. For one or more cents can be had a newspaper with more reading matter than would fill a stout octavo volume. Yet books are made and sold in limited editions to eager subscribers at prices ranging from \$5 to \$50 a volume. William Morris maintained that printing had gone steadily from bad to worse till he revived its best features. Many publishers maintain, with more reason, that books of real value for instruction or amusement were never better fitted than they now are for usefulness to all classes of readers.

**Prison**, a place of detention for persons convicted of crime. The most advanced examples of prison discipline and construction are to be found in the United States.

In some of the Southern States prisoners are leased out to the highest bidders for the term of their sentences; but this system, which condemns the convicts to a slavery that is not modified even by considerations arising from personal ownership, is gradually being abandoned. The first place of detention for juvenile delinquents was opened at New York in 1825; the first reformatories on the cottage or family system were established in Ohio—for boys at Lancaster in 1858, for girls at Delaware in 1878.

**Prisoners of War**, those who are captured from the enemy during naval or military operations. In ancient times the treatment of prisoners of war was very severe. In the Greek wars it was no uncommon thing to put the whole adult male population of a conquered state to the sword,

## Privateer

while the women and children were enslaved. Though the putting to death of prisoners became less frequent, they and their families were commonly reduced to slavery to as recent a period as the 13th century. The act of Napoleon in putting to death the Turkish prisoners of war at Jaffa in 1799 was universally condemned, and is probably the last instance of such barbarity.

**Pritchett, Henry Smith**, an American educator; born in Fayette, Mo., April 16, 1857; became an astronomer in the United States Naval Observatory; astronomer of the Transit of Venus Expedition (1882); Professor of Astronomy and Director of Observatory, Washington University, St. Louis, Mo. (1883-1897); Superintendent United States Coast and Geodetic Survey (1897-1900); president, Massachusetts Institute of Technology (1900-1906); and president of the Carnegie Foundation for the Advancement of Teaching (1906).

**Privateer**, a ship owned by a private individual, which under government permission, expressed by a letter of marque, makes war on the shipping of a hostile power. To make war on an enemy without this commission, or on the shipping of a nation not specified in it, is piracy. At the American Revolution the new republic fully realized the advantage of its position in preying on the mercantile marine of Great Britain; and in the War of 1812 British commerce suffered severely at the hands of American privateers, of which it was computed that some 250 were afloat. During the American Civil War the Confederate States offered letters of marque to persons of all countries, but no admittedly foreign vessels were so commissioned. During the same period the Congress of the United States empowered the President to grant commissions to privateers, but none such were granted. The Confederate cruisers were at first regarded in the North as mere pirates; and the "Alabama Claims" originated in the charge against Great Britain of allowing the departure of privateers from British ports, where they were fitted out illegally. The charge was fully sustained, it being shown before the Geneva Tribunal that the Alabama and other so-called Confederate ships were really British.



**Privet**, a genus of plants containing a number of species of shrubs and small trees with opposite leaves, which are simple and entire at the margin; the flowers small, white, and in terminal panicles. Common privet is a shrub growing in bushy places and about the borders of woods in the middle and S. of Europe, and now also naturalized in some parts of North America.

**Privileged Witnesses**, witnesses who are not obliged to testify as to certain things, as lawyers in relation to their dealings with their clients, and officers of State as to State secrets; also, by statute, in some instances, clergymen and physicians are placed in the same category, so far as concerns information received by them professionally.

**Privy Council**, in English law, the principal council of the sovereign, consisting of members chosen at his or her pleasure. It is presided over by the Lord President of the Council, who has precedence next after the Lord Chancellor. Members of the privy council are addressed as Right Honorable.

The office of a privy counselor is now confined to advising the sovereign in the discharge of executive, legislative, and judicial duties.

**Privy Seal**, the seal used in England to be appended to grants which are afterward to pass the great seal, and to documents of minor importance, which do not require to pass the great seal.

**Prize**, that which is taken from an enemy in war; that which is seized by fighting, especially a ship, with the goods contained in her; any description of goods or property seized by force as spoil or plunder.

**Prize Court**, a court established to adjudicate on prizes captured at sea. In the United States, the United States District Courts have jurisdiction both as instance and prize courts.

**Prize Money**, money paid to the captors of a ship or place where booty has been obtained, in certain proportions according to rank, the money being realized by the sale of the booty.

**Probate**, in law, the official proof of a will. This is done either in common form, which is upon the oath of

the executor before the judge of the probate court; or per testes (by witnesses), in some solemn form of law, in case the validity of the will is disputed.

**Probate Court**, a court of record established to exercise jurisdiction and authority in relation to probate of wills and letters of administration, and to hear and determine all questions relating to matters and causes testamentary. In New York it is called the "Surrogate's Court"; in Pennsylvania the "Orphans' Court."

**Probationer**, one who is in a state of probation or trial, so that he may give proof of his qualifications for a certain position, place, or state.

**Proboscis Monkey**, or **Kahan**, a native of Borneo, distinguished particularly by its elongated nose, its shortened thumbs, and its elongated tail. The general color is a lightish red. These monkeys are arboreal in habits, and appear to frequent the neighborhood of streams and rivers, congregating in troops.

**Probus, Marcus Aurelius**, a Roman emperor; born in Sirmium, Pannonia. By the Emperor Tacitus he was appointed governor of the Asiatic possessions of Rome; and such was the zealous attachment evinced for him by his soldiers that on the death of Tacitus they forced him to assume the purple; and, his rival Florianus having been removed, Probus was enthusiastically hailed emperor by all classes (A. D. 276). His brief reign was signalized by brilliant and important successes; the Germans were driven out of Gaul, and the barbarians from the Rhetian, Pannonian, and Thracian frontiers; and Persia was forced to agree to a humiliating peace. The external security of the empire being established, Probus devoted himself to the development of its internal resources. After a short reign he was murdered in a military insurrection in 282 A. D.

**Procedure, Civil**, the method of proceeding in a civil suit throughout its various stages.

**Process**, in anatomy, an enlargement, such as the zygomatic process of the temporal bone, the vermiform process of the cerebellum, etc. In law, a term applied to the whole course of

proceedings in a cause, real or personal, civil or criminal, from the original writ to the end of the suit; specifically, the summons citing the party affected to appear in court at the return of the original writ.

**Procession**, the act or state of proceeding or issuing forth or from. Also a train of persons marching on foot, or riding on horseback or in vehicles with ceremonious solemnity.

**Proclamation**, a public notice made by a ruler or chief magistrate to the people, concerning any matter which he thinks fit to give notice about. In the United States the President issues proclamations as to treaties, days of thanksgiving, admission of new States, etc.; likewise governors of States and mayors of cities for special purposes.

**Proconsul**, in Roman antiquities, an officer who, though not actually holding the office of consul, exercised in some particular locality all the powers of a consul.

**Procopius**, an eminent Greek historian of the 6th century, the leading authority for Justinian's reign; born in Cæsarea, Palestine. Of his writings we have the "Histories," or as the author styles them, "Books about the Wars" of his time—Persian, Vandal, and Gothic; a treatise "On Buildings"; "Anecdotes" (posthumous), a supplement to the "Histories," consisting of political and personal matter he dared not publish in his lifetime.

**Procter, Bryan Waller**, pseudonym Barry Cornwall, an English poet; born in London, England, Nov. 21, 1787. He early published four volumes of poems, and produced a tragedy at Covent Garden, whose success was largely due to the acting of Macready and Kemble. He was called to the bar in 1831, from 1832 to 1861 was a metropolitan commissioner of lunacy. His works were issued under the pseudonym "Barry Cornwall" (a faulty anagram of his real name). He died Oct. 5, 1874.

**Proctor**, in an American university, an executive officer whose duty it is to preserve order and enforce the laws of the institution. In England the king's proctor is a crown official charged with upholding the interests

of the crown in certain classes of private law-suits.

**Proctor, Edna Dean**, an American poet; born in Henniker, N. H., Oct. 10, 1838. Her works are: "Poems"; "The Song of the Ancient People"; "Mountain Maid and Other Poems of New Hampshire"; etc.

**Proctor, Richard Anthony**, an English astronomer, author of a large number of popular works, principally on astronomy; born in London, England, March 23, 1837. He was a graduate of St. John's College, Cambridge, in 1860. About 1885 he settled in St. Louis, and later moved to Florida. He was at the time of his death the editor of "Knowledge," a monthly journal of popular science. He was a very popular lecturer. He died in New York city, Sept. 12, 1888.

His daughter, **MARY**, born in Dublin, Ireland; was graduated at the College of Preceptors, London, in 1898; took the course in Descriptive Astronomy at Columbia University in 1900; observed and reported several notable astronomical occurrences; delivered over 800 lectures on astronomy since 1893 and annual courses under the New York Board of Education since 1894.

**Professor**. (1) One who professes or makes open and public declaration or acknowledgment of his sentiments, opinions, belief, etc. (2) One who makes a public profession of religion in those churches where such a rule prevails instead of confirmation. (3) One who teaches any art, science, or branch of learning; specifically a person appointed in a university, college, etc., to deliver lectures and instruct the students in any particular branch of learning; as, a professor of Greek, a professor of theology, etc. By common use, the title professor has become greatly abused, and is assumed, not only by teachers of music, dancing, drawing, etc., but even by quacks, conjurers, teachers of boxing, animal trainers, etc.

**Profit**, any advantage, benefit, or accession of good resulting from labor or exertion; valuable results, useful consequence, benefit, gain; comprehending the acquisition of anything valuable or advantageous, corporeal, or intellectual, temporal or spiritual.

**Progressive Party, The,** a National political party organized in Chicago, Ill., in June, 1912, by regular and unseated delegates to the Republican National Convention who favored the candidacy of former President Roosevelt. In the balloting for the nomination, President Taft received 561 votes and Roosevelt 107, while 344 delegates disregarded their local instructions and acceded to Roosevelt's request that his supporters refrain from taking any part in the proceedings of the Convention, on the ground that the National Committee had defrauded him out of many votes in their decisions on contested seats. The new party held its first convention in Chicago on August 5-7, adopted a platform in consonance with the former President's public speeches and writings, and unanimously nominated him for President, with Governor Hiram W. Johnson, of California, for Vice-President. Under the distinguishing emblem of the Bull Moose, the new party rapidly gained strength throughout the country, drawing its largest forces from among the members of the Republican party who had become dissatisfied with the methods and policies of the administration of President Taft. Prior to the nominations, Messrs. Taft and Roosevelt both made extended speaking tours. In the election Theodore Roosevelt received 4,119,507 votes, against 6,293,019 for Gov. Woodrow Wilson, of New Jersey. The party under leadership of Senator Robert M. La Follette defeated in 1924.

**Prohibition,** as used in reference to the liquor laws is a several sided question, and has been very complex in its application. Generally speaking, the idea of prohibition has always been to raise revenue and to check the evils arising from the immoderate use of alcoholics, such as disorderly conduct, immorality, and poor health.

The farther north one goes the more given the people are to excessive drinking, while the people of the Southern Climes use weaker drinks with more moderation. Consequently prohibition has always been a more serious question in the Northern countries. The same natural laws that make a Northern race a race of excessive drinkers also influences the

food they eat. It seems to be governed by the climate. But it has been noted that a race that migrates carries its drinking habits with it, and several generations pass before the drinking habits of the natives are adopted.

Licensing is by far the oldest and most widely used of prohibitive measures, and it probably all started in this manner. When any person began making and selling something that became a public nuisance, someone would always object to such an extent that the authorities would have to step in and say that only responsible persons would be permitted to manufacture and market the product. These persons would be given a permit of license. This system was popular because it was elastic and could be fitted to almost any set of conditions. A license could be anything from a written public notice to a strict set of regulations including a very heavy fee. This system has been very widely used in Europe and North America, but has given way in several countries to the Scandinavian or "company" system, which entrusts the sale of liquor to a body of disinterested citizens, who see that the profits therefrom are used for public benefit.

A third system, called State monopoly, puts the liquor trade in the hands of the Government, allowing it to exercise complete control. The fourth system, which calls itself prohibition, may be either local or general and prohibits the sale of liquors in the hope that drinking of intoxicants will be stopped altogether. Up until the passing of the Volstead act it has been tried in various parts of the United States with varying success. Many towns, counties and states voted themselves "dry." Some felt that they were benefitted and others not.

Let us take the case of prohibition in America: During Colonial times drinking was very common, dances, funerals, and marriages being the times when liquor ran most free. In 1629 the Virginia assembly passed a law that ministers of the gospel should not give themselves to excessive drinking. This was probably the beginning of the movement in America. But the movement was slow to progress, be-

cause records show that in 1810 there were 14,191 distilleries in the United States, and the consumption of intoxicants, measured in terms of pure alcohol, was about two gallons per capita per annum.

Thomas Jefferson urged the establishment of breweries in the hope that it would reduce the amount of strong liquor drunk, but the people only drank more beer, so that in the end, the amount of alcohol consumed was about the same.

In 1826 the American Temperance Society was founded and called for total abstinence, and signed pledges to that effect. In 1869 a Prohibition Society was formed and nominated candidates for President and Vice-President of the United States. The party lasted through about 13 presidential elections.

In 1869 the Women's Christian Temperance Union began to function, and in the early nineties the Anti-Saloon League of America, which called itself "The Church in Action," declared war on John Barleycorn. The battle between the "wets" and the "drys" waxed very strong until February, 1917, when Congress passed a "bone-dry" law stopping interstate shipment of intoxicants into dry territory. Later prohibition became a constitutional amendment, being quickly ratified by 45 State Legislatures.

The probable reason for the sweeping victory of prohibition at this time was that it was urged as a war measure to make the nation more efficient, through conservation of grain that would have been used to manufacture alcoholics, and also due to the fact that sober men are said to be more reliable, trustworthy and productive.

At the present time there is much dissatisfaction in regard to the amendment, and due to prejudiced opinions accurate facts are difficult to get. However, in 1927 the government was employing over 5,000 men in an attempt to enforce the measure. There had been 51,945 arrests made for violation of this law, and over 36,000 of these were convicted. The government had eight warehouses containing 1,465,802 gallons of distilled spirits, from which for medicinal purposes, etc., the internal revenue amounted to \$502,876.72.

**Prohibition Party, The.** In recent years the cause of absolute prohibition has made great strides in the United States. In the State of Maine, the mother State of prohibitory legislation, what is known throughout the world as the "Maine law" has been in successful operation for a quarter of a century. In various States gubernatorial and State tickets were nominated in successive years from 1876 to 1886, but no election resulted in any case. In New Jersey and in New York in 1886 great interest centered around the efforts of the Prohibition party, owing to the closeness of the vote between the two older parties, though the vote polled by the Prohibitionists amounted to only a few thousands.

In 1916, twenty-two states had adopted prohibition, then one year later, when the eighteenth amendment was ratified, the party ceased to be.

**Prometheus,** in mythology, the son of the Titan Japetus, was a brother to Atlas and Epimetheus, and surpassed all mankind in cunning. He ridiculed the gods, and deceived Jupiter himself. To punish Prometheus, Jupiter caused this wily mortal to be tied to a rock on Mount Caucasus, where, for 30,000 years, vulture was to feed on his liver, which was never to be diminished. He was delivered from this punishment 30 years afterward by Hercules.

**Promise,** in law, a declaration made by one person to another for a good or valuable consideration, whereby the person promising binds himself to do or forbear some act, and gives to the promise a legal right to demand and enforce a fulfillment.

**Promised Land,** Canaan; that portion of Syria lying between the Jordan and the Mediterranean. It was frequently promised by Jehovah to the patriarchs, and finally bestowed on their descendant, the Israelites.

**Promissory Note,** a written promise to pay a given sum of money to a certain person, at a specified date. The phrase "for value received" is their descendants, the Israelites.

**Prong-horn Antelope,** inhabiting the W. parts of North America, from 53° N. to the plains of Mexico and California. It is rather more than four feet in length, and stands three

feet at the shoulder. Pale fawn above and on the limbs; breast, abdomen, and rump white. The horns are branched, and are shed annually.



PRONG-HORN ANTELOPE.

**Pronoun**, a word used in place of a noun or name in order to avoid the too frequent repetition of such noun or name, but differing from a noun in not being permanently attached to any certain object or class of objects, and in not being limited in its application. Pronouns in English are divided into: (1) Personal, (2) Demonstrative, (3) Interrogative, (4) Relative, and (5) Indefinite. Interrogative pronouns are those which serve to ask a question, as *who? which? what?* Indefinite pronouns, or such as do not specify any particular object, are used, some as substantives, some as adjectives; as, *any, aught, each, every, other, etc.*

**Propaganda Fide, Congregation de**, a commission of cardinals charged with the direction of all matters connected with foreign missions in the Roman Church. Pope Urban VIII. (1623-1644) founded the Propaganda College, and here young men of all nations are trained for the priesthood, and take an oath to devote

themselves for life to the foreign missions in whatever province or vicariate they may be appointed to by the congregation.

**Propeller**, one who or that which propels; specifically, the screw by which a steamship is driven through the water; a vessel thus propelled.

**Property Tax**, a rate or duty levied by the State, county, or municipality on the property of individuals, the value of the property being fixed by assessment.

**Prophet**, one who prophesies; one who is the bearer of a divine message to mankind; more familiarly, one who predicts future events. The prophet was a revealer in distinction from the priest, whose functions pertained to ritual.

**Prophets, School of the**, an association of the prophets in which the elder lovingly trained the younger, who were called their sons (1 Kings xx: 35). First Elijah, and then Elisha, presided over such a society.

**Prophets, The**, men divinely inspired, and who often uttered predictions of future events. The order was early recognized among the Hebrews. The title was given to Moses, and after his time to men who, as reformers or teachers, declared God's will to the nation. Samuel and Elijah were notable examples. Later, the prophets committed their messages to writing. Sixteen of their books are included in the canon. They are divided into four groups: 1. The prophets of the Northern kingdom: Hosea, Amos, Joel, and Jonah; 2. The prophets of the Southern kingdom: Isaiah, Jeremiah, Obadiah, Micah, Nahum, Habakkuk, and Zephaniah; 3. The prophets of the Captivity: Ezekiel and Daniel; 4. The prophets of the Return: Haggai, Zechariah, and Malachi. The title was also applied to John the Baptist and to Christ.

**Prophet's City**, a name by which Medina, in Arabia, is often referred to. To this place Mohammed fled for refuge during the Hegira, July 16, 622, and here is his tomb.

**Prorogation**, in English law, the interruption of a session, as distinguished from an adjournment, which is from day to day, and may be of either or both houses, while a prorogation is of Parliament, also the



time during which the English Parliament is prorogued.

**Proscenium**, the stage of a theater, or the space included in the front of the scene; in contradistinction to the postscenium, or space behind the scene. In the modern theater it is improperly used to designate the ornamental framework from which the curtain hangs when performances are not going on, dividing the spectator from all engaged on the stage.

**Proscription**, in Roman history, a mode of getting rid of enemies, first resorted to by Sulla in 82 B. C., and imitated more than once afterward in the stormy years that closed the republic. Under Sulla, lists of names were drawn out and posted up in public places, with the promise of a reward to any person who should kill any of those named in the lists, and the threat of death to those who should aid or shelter any of them. Their property also was confiscated, and their children were declared incapable of honors.

**Prosecution**, in law, (1) the instituting and carrying on of a suit in court of law or equity to obtain some right, or to redress and punish an injury or wrong. (2) The act or process of exhibiting formal charges against an offender before a legal tribunal, and pursuing them to final judgment; the instituting and continuing of a criminal suit against any person or persons. (3) The party by whom criminal proceedings are instituted; the prosecutor or prosecutors collectively.

**Proselyte**, a new convert to some religion, sect, opinion, party, or system. In Judaism, a gentile convert. Two kinds were discriminated: (1) Proselytes of the gate, who followed a few Old Testament rules, and (2) proselytes of righteousness, who accepted the whole Mosaic ritual.

**Proserpine**, in mythology, a daughter of Ceres and Jupiter, of extreme innocence and beauty, and who, while gathering flowers in the lovely vale of Tempe, or the Mysian Plain, was seen and carried off by the god of the infernal regions, Pluto. The prayers and intercessions of her mother ultimately prevailed on Pluto to permit her to spend half of each year on earth, to gratify and gladden the

heart and eyes of her devoted parents, the other half being passed with her infernal lord in the realms below.

**Prosody**, that part of grammar which treats of the quantities of syllables, of accent, and of the laws of versification. In Greek and Latin every syllable had its determinate value or quantity, and verse was constructed by a system of recurring feet, each consisting of a certain number of syllables, possessing a certain quantity and arrangement. In English, verse is constructed simply by accent and number of syllables.

**Protection**, one of the theories concerning the best development of a country's industries by means of taxes levied for other than fiscal purposes. Incidental protection does not hold that any tariff should be levied with the intention of protecting and fostering a given industry, but that in every case the tax should be laid for public purposes only—i. e., with the intention of sustaining the state, and be only incidentally directed to the protection of the weaker industry. These last assumptions furnish the ground of political divergence between freetrade proper (q. v.) and incidental protection. The protectionists take into consideration both the fundamental conditions of the argument and the peculiar character of the industries of a people. They claim that given pursuits may thus be strengthened and encouraged by legislative provisions, and that natural and political laws may be made to coöperate in varying and increasing the productive resources of the state.

**Protector**, in English history, one who had the care of the kingdom during the minority of the king; a regent; specifically applied to Oliver Cromwell, who took the title of Lord Protector in 1653. In the Roman Catholic Church a cardinal belonging to one of the more important Catholic nations, who, in Rome, watches over questions affecting his country. There are also cardinal protectors of religious orders, colleges, etc.

**Proteids**, a name given to substances analogous in composition to protein, that is, consisting of carbon, hydrogen, oxygen, and nitrogen, sometimes united with sulphur and phosphorus. The gluten of flour, albumin,

the fibrin of the blood, syntonin, which is the chief constituent of muscle and flesh, and casein are examples of proteids. Proteids are the essential food stuffs.

**Protest**, ordinarily, a solemn affirmation or declaration of opinion (frequently in writing), generally in opposition to some act or proposition; a solemn affirmation by which a person declares either that he entirely dissents from and disapproves of any act or proposition, or else only conditionally gives his assent or consent to an act or proposition, to which he might otherwise be considered to have assented unconditionally.

In commerce, a formal declaration by the holder of a bill of exchange or promissory note, or by a notary public at his direction, that acceptance or payment of such bill or note has been refused, and that the holder intends to recover all expenses to which he may be put in consequence of such non-acceptance or non-payment.

**Protestant**, one who protests. In Church history, the name given to those princes and others who, on April 19, 1529, at the second diet of Speyer, protested against the decision of the majority, that the permission given three years before to every prince to regulate religious matters in his dominions till the meeting of a General Council should be revoked, and that no change should be made till the council met. The name is now extended to all persons and churches holding the doctrines of the Reformation and rejecting papal authority.

**Protestant Episcopal Church**, a denomination in the United States directly descended from the Church of England, which doctrinally claims to be based on the Holy Scriptures, as interpreted in the Apostles and other ancient creeds of the Church that have been universally received, and to have kept herself aloof from all the modern systems of faith, whether of Calvin, or Luther, or Arminius, leaving her members free to enjoy their own opinions on all points not represented in the Scriptures as necessary to soul's health, and refusing to be narrowed down to any other creed or creeds than those of the Apostles and the Primitive Church. She claims also to have retained all that is essential

to church organization in her episcopate, and in her liturgy to have not only a wise and judicious compend of doctrine and devotion, but also one of the most effectual of all possible conservative safeguards for the faith once delivered to the saints. Three clerical orders are recognized—bishops, priests, and deacons—the first deriving their office in direct succession from the apostles by episcopal consecration, and the others receiving ordination at the hands of a bishop. Those of the second order are entitled archdeacons, deans, rectors, vicars, or curates, according to their functions. A reader is a layman licensed by the bishop to read in a church or chapel where there is no clergyman. Parson signifies a clergyman in possession of a parochial church.

From the time of the first congregations of the Church of England, in America, in 1607, to the close of the Revolution, all the clergy in the colonies were regarded as under the supervision of the Bishop of London. The first American bishop was Rev. Samuel Seabury, who, in 1783, was consecrated in Scotland as Bishop of Connecticut. All Protestant Episcopal churches in the United States are associated in one national body, called the General Convention, which meets triennially.

In 1927 it was estimated that there were 1,218,941 members or communicants, 6,207 clergy, 6,000 Sunday Schools and 495,894 pupils and 58,462 Sunday School teachers. The total contributions for the year were \$44,743,842. The church also maintained 15 theological seminaries.

**Protocol**, the original draft or copy of a deed, contract, or other document. In diplomacy, the minutes or rough draft of an instrument or transaction; the original copy of a treaty, dispatch, or other document; a document serving as the preliminary to diplomatic negotiations; a diplomatic document or minute of proceedings, signed by the representatives of friendly powers in order to secure certain political ends peacefully; a convention not subject to the formalities of ratification.

**Protophytes**. The lowest and simplest organisms in the vegetable kingdom. They are regarded as among the Alga. The life-history of simplest

Protophytes is exemplified in the *Pal-moglea macrococca*, a sort of green scum or slime, growing on damp stones, etc. The cells are generally independent, but in some species remain adherent one to another so as to form a filament. Some species have spiny projections of the outer coat, which is of a horny consistence, as in *Staurostrum*. Others are notched on the sides; some, as the *Closterium*, are smooth. Many of the Desmids multiply by subdivision, but the plan is modified so as to maintain the symmetry characteristic of the tribe. At other times multiplication takes place by the subdivision of the endochrome into granular particles, or "gonidia," set free by rupture of the cell wall.

**Protoplasm**, in biology, etc., the living matter from which all kinds of living things are formed and developed, and to the properties of which all their functions are ultimately referred. Protoplasm is a transparent homogeneous, or granular-looking substance. Under high microscopic power, in many instances, it shows a more or less definite structure, composed of fibrils more or less regular, and in some instances grouped into a honey-combed or fibrillar reticulum, in the meshes of which is a homogeneous interstitial substance. Its composition is a problem with which science is still to deal.

**Protozoa**, a group of animals, occupying the lowest place in the animal kingdom. They consist of a single cell, or of a group of cells not differentiated into two or more tissues; incapable, as a rule, of assimilating nitrogen in its diffusible compounds (ammonia or nitrates, or carbon in the form of carbonates). The food is taken into the protoplasm, either by a specialized mouth or by any part of the cell substance, in the form of particles.

**Proudhon, Pierre Joseph**, a French publicist; born in Besancon, France, July 15, 1809; died Jan. 19, 1865. In 1840, appeared his famous memoir, entitled, "What is Property?" his answer to this question, "Property is Theft," being almost all that is popularly known of him. A second memoir on the same subject exposed him to a prosecution, but he was acquitted. After the revolution of February, 1848, he was

chosen member of the Constituent Assembly for the department of the Seine. But he found no hearing at the tribune, and therefore started a newspaper under the title of "The People," which was suppressed, and reappeared three times. In 1849, he founded his People's Bank, but being soon after sentenced, under the press laws, to three years' imprisonment and a fine, he left France, and the bank was closed by the government.

**Prout, Father.** See MAHONY.

**Provancher, Leon**, a Canadian priest and naturalist; born in Becancour, P. Q., March 10, 1820. He established "Le Naturalist Canadien" ("The Canadian Naturalist") in 1868. His publications include: "Elementary Treatise on Botany"; "Canadian Plant Life"; "Short History of Canada"; etc.

**Provençal**, a Romance dialect that sprang up in France on the decline of literary Latin. Originally Provençal and Northern French came from the same stock, but by the 12th century they differed almost as widely as French and Italian. Owing to its rhyming facilities it was essentially the language of the troubadours and extended over the area from the Alps to the Pyrenees and the Mediterranean to the Loire, as well as in parts of Spain and Switzerland.

**Proverb**, an old and common saying; a short or pithy sentence often repeated, and containing or expressing some well-known truth or common fact ascertained by experience or observation; a sentence which briefly and forcibly expresses some practical truth. Unless a saying is capable of being applied to a variety of cases it can never become a proverb.

**Proverbs of Solomon**, one of the sacred books of the Old Testament ascribed to Solomon. The Hebrew term translated proverbs means literally, a similitude or comparison of two objects, and this is the form that most of them take. Solomon, we are told, uttered 3,000 proverbs; but it has been doubted whether he ever made any collection of them in writing; and it is expressly stated that the latter part of the book, beginning with chapter xxv., was written and added by order of King Hezekiah. The title shows the author rather than the

## Providence

compiler. In all ages this book has been regarded as a great store house of practical wisdom.

**Providence**, a city, capital of the State of Rhode Island, and the county-seat of Providence co.; on the Providence river, an arm of Narragansett Bay, and 44 miles S. W. of Boston. It is the second city of New England in population and wealth, and is built on a rolling plateau.

In 1925 Providence had 806 manufacturing plants, employing 41,207 wage earners, paying \$49,710,053 for wages, and \$107,068,159 for raw materials, and yielding products having a combined value of \$212,117,987.

The chief article of manufacture was jewelry, and this industry had 209 manufacturing plants, employing 6,689 wage earners, paying \$7,134,904 for wages, and \$14,438,832 for raw materials, and yielding products having a combined value of \$29,823,074. Other industries include silverware, tools, engines, locomotives, boilers, sewing machines, files, screws, general hardware, calico, yarn, chemicals. There is an extensive coastwise commerce in coal.

In 1636 Roger Williams, a Baptist clergyman, was exiled from Massachusetts because he opposed its theocratic laws. He first settled at What Cheer rock, on the Seekonk river, and later at the head of the Providence river, where the Indian chief, Canonius, granted him a piece of land. In 1643-1644 local government was formed under a royal charter. Providence received its city charter in 1832, and has been enlarged by annexation from adjoining towns. Pop. (1920) 237,595; (1930) 252,981.

**Provins**, a town of N. France, at the junction of the Durtain and the Voulzie rivers; 55 miles S. W. of Chalons, 59 miles S. E. of Paris. During the 13th century the town is said to have had a population of 60,000, but the plague of 1348 and the famine of 1349 proved disastrous. Fully 1,000 years ago fairs held here were attended by traders from all parts of Europe, and Provins money was current throughout the continent. The ruin of the ancient town was completed in the Hundred Years' War. Now it is chiefly noted for its mineral springs, its trade in roses, and its

## Prussia

remains of medieval prosperity. Pop. about 9,000.

**Prudden**, **Theophil Mitchell**, an American bacteriologist; born in Middlebury, Conn., July 7, 1849. He was Professor of Pathology in the College of Physicians and Surgeons, New York. His works include: "Handbook of Pathological Anatomy and Histology," with F. Delafield; "Story of the Bacteria"; "Dust and its Dangers"; "An Elder Brother to the Cliff Dweller": etc.

**Prussia**, the largest and now a Free State of the German republic, occupying a N. central portion of the European continent; bounded on the N. by the Baltic and Denmark; on the E. by Russia and Poland; on the S. by Bohemia, Bavaria, Wurtemberg, and Baden; and on the W. by Belgium and the Netherlands. The length of the coast line is about 250 miles on the North Sea, and 750 miles on the Baltic. Area, square miles, 113,149. Pop. (1919) 36,094,944.

Prussia is administratively divided into 14 provinces, which are again subdivided into 35 government districts, with the Free State of Hohenzollern, the cradle of the royal family.

The surface of the Free State is generally level, sloping in the N. to the sea, and forming part of the great N. plain of Europe. The S. and S. W. parts of the kingdom are hilly, or even mountainous. The climate of Prussia is varied. Along the Baltic it is moist, and in Eastern Prussia, especially, the winter is long and severe. In Silesia, Brandenburg, and the Saxon and Rhenish provinces, it is comparatively mild.

About 28,479,800 hectares are under cultivation. Large estates are generally managed by stewards and the occupants of smaller properties are, in most cases, the owners. Rye, wheat, barley, oats, potatoes, beet root, flax, hops, tobacco and hemp form the chief products. Chicory is also largely cultivated. The extensive beet root plantations give rise to one of the most important industries; in 1898 there were 312 establishments manufacturing beet root sugar. Madder and other plants used in dyeing are also raised. Fruits and vegetables are most extensively grown in the W. provinces, which are also famous for their wines. Horses, cattle and sheep are extensive

ly raised, wool being an important product. Large numbers of fine horses are exported from East Prussia.

The mineral products are abundant, coal being the most important. The production of lignite is large. Copper, iron and lead are extensively worked. Prussia yields about one-half of the world's annual production of zinc.

Though more of an agricultural than a manufacturing country, Prussia has greatly distinguished herself, particularly of late years, in the various manufactures. Linens and coarse woollens for domestic consumption are made in every village, and, indeed, in most cottages throughout the kingdom. Large quantities of silk and cotton goods, and linen, are produced in Elberfeld, and other towns of the Rhine provinces. Very superior broad-cloth is largely manufactured at Eupen, Malmedy, Berlin, and Aix-la-Chapelle. Prussia occupies an advanced rank as a producer of the useful metals. The articles of hardware made at Berlin, Iserlohn, Hagen, Solingen, Olpe, and Essen enjoy a high reputation, the last-named place being the seat of the famous Krupp steel and gun works. Porcelain, jewelry, watches, and carriages are also manufactured in the latter city on a most extensive scale. Paper, leather, soap, oil and cigars are important manufactures; and beer and spirits are very extensively produced.

Commerce is facilitated by the long coast line, and by an elaborate system of railways and canals. Throughout the kingdom, education is general and compulsory. Absolute religious liberty is guaranteed by the constitution. Nearly two-thirds of the population are Protestants and most of the remainder, Roman Catholic. The State Church is Evangelical or Protestant, and since 1817 has consisted of a fusion of the Lutheran and Calvinistic bodies. The relations of the Roman Catholic Church to the government differ in the various provinces, but in every part of the monarchy the crown reserves to itself control over the election of bishops and priests. The higher Catholic clergy are paid by the State.

The constitution vests the executive and part of the legislative authority in a king who attains his majority on accomplishing his 18th year. The

crown is hereditary in the male line, according to primogeniture. The king is advised by a council of ministers appointed by royal decree. The representative assembly, the Landtag, is composed of two chambers, the House of Lords (Herrenhaus) and the Chamber of Deputies (Abgeordnetenhaus). The assent of the king and both chambers is requisite for all laws. The executive government is carried on by a Ministry of State appointed by the king and holding office at his pleasure.

The rise of the Prussian power has been rapid and extraordinary. The kings of Prussia trace their origin to Count Thassilo of Zollern, one of the generals of Charlemagne. His successor, Count Friedrich I., built the family castle of Hohenzollern, near the Danube, in the year 980. A subsequent Zollern, or Hohenzollern, Friedrich III., was elevated to the rank of a prince of the Holy Roman Empire, in 1273, and received the burgraviate of Nuremberg in fief; and his great-grandson, Friedrich VI. was invested by the Emperor Sigismund, in 1411, with the province of Brandenburg, and obtained the rank of Elector in 1417. In 1608-1619 the duchy of Prussia was united to the electorate of Brandenburg, the territories of which had been greatly extended by the valor and wisdom of Friedrich Wilhelm, "the Great Elector," under whose fostering care arose the first standing army in central Europe. Dying in 1688, he left the province to his son, Frederick I., who assumed the crown at Königsberg, June 18, 1701. Pomerania was soon after added to Prussia. When Frederick the Great ascended the throne in 1740, his disjointed dominions did not contain 2,500,000 inhabitants, and these had made but little progress in the arts, or in the accumulation of wealth. But before his death, in 1786, Prussia had been increased in size nearly half; while the population had increased to about 6,000,000. Prussia acquired, by the subsequent partition of Poland in 1792, and its final dismemberment in 1795, a great extension of territory, and upward of 2,000,000 inhabitants. Her disastrous contest with France in 1806 lowered Prussia for a while; but after Napoleon's Russian campaign, the people rose en masse,



and drove the French out of Germany. At the general peace of 1815, Prussia recovered all her former possessions (except a portion of her Polish dominions), and gained valuable acquisitions. After the accession, in 1862, of King William I., the executive government presided over by Count von Bismarck, made laws, and even decreed budget estimates, without the concurrence of the chambers. In 1864, Prussia, conjointly with Austria, sent an army to occupy the duchy of Schleswig-Holstein. A war with Denmark followed, which resulted in the annexation of that duchy to Prussia. In 1866, Hanover and Saxony were occupied by the Prussian troops, and a war followed with those kingdoms and with Austria, in which, after a brilliant campaign of two weeks, the latter power was obliged to sue for peace, and relinquish her claims as a German power. In addition, Saxony was left a mere nominal sovereignty under the control of Prussia, while Hanover, Hesse-Cassel, Nassau, and the former free city of Frankfurt-on-the-Main became absorbed in the Prussian monarchy. In August, 1870, Napoleon III. declared war against Prussia, and the French armies marched toward the Rhine. An alliance having been entered into between Prussia and the Southern German powers of Bavaria, Wurtemberg, and Baden, their combined forces crossed the Rhine into France. The part of Prussia in the Franco-German war is inextricably involved with that of the whole German nation. The conflict seemed to precipitate the solution of the question which had always been the aim of the king and Bismarck, German unity under Prussian leadership. On Jan. 18, 1871, King William was crowned at Versailles as Emperor of Germany, and on March 21, the first German Reichstag assembled at Berlin. The history of Prussia since is that of Germany.

**Przemysl**, a town of Galicia, Poland, especially noted in the World War. It is 38 miles S. of the Russian Poland border, 57 miles W. of Lemberg, and 81 miles S. E. of Tarnow; is situated on the San river; and is one of the strongest fortresses in Galicia, besides being one of the oldest towns, having been founded in the 8th cen-

tury. At one time it was the capital of a large independent principality; but in the 17th century its importance was destroyed by inroads of Tartars, Cossacks, and Swedes. Its present industries comprise the manufacture of machinery and liquors, the refining of naphtha, corn milling, and timber working. Pop. (1925 Est.) 47,958. In the World War it was invested by the Russians, Sept. 22, 1914; occupied by them, March 22, 1915; and surrendered June, 1915. Given to Poland by Treaty of Versailles.

**Psalms, Book of**, a book of the Old Testament. It was the praise book or psalter of the Hebrew temple or synagogues. In the present Hebrew Bibles it is placed just after the Prophets at the head of the Hagiographia, and in Luke xxiv:44, is generally supposed to stand for that division of the Old Testament books. The 150 psalms are arranged in Hebrew in five books, each terminating with a doxology, in some cases closing with "Amen and amen." The revised version prints them separately. The book of Psalms is quoted or alluded to as an inspired composition by Our Saviour and His apostles at least 70 times; no Old Testament book is more frequently quoted. Its canonical authority has never been seriously doubted. Its rhythmical form (now rendered obvious by the revised version) adapt it for the musical part of public worship.

**Psalter**, the Book of Psalms; also a book containing the Psalms separately printed, and with musical accompaniment adapted to each; also specifically, the versions of the Psalms in the English Book of Common Prayer.

**Pseudonym**, a false, feigned, or fictitious name; a pen-name.

**Pskov**, a Russian town on both banks of the Velikaya river, 170 miles S. W. of Petrograd; was formerly the sister republic of Novgorod, and was one of the oldest cities in Russia, maintaining its independence until the 16th century, and having at one time 60,000 population. The ruins of the old wall, built in 1266, descends to the right bank of the river, while ruins of numerous rich and populous monasteries in or near the town attest its former greatness. Pop. (1925) 34,200.

**Psychology**, the science of mental phenomena. Opinion is far from unanimous on many of the most important points of psychological doctrine, especially on such points as involve a philosophical view of the nature of mind.

**Ptarmigan**, a game bird found in the United States, and also in Northern Europe. In winter the plumage of the male is almost wholly white, with a small patch behind the eye; the shafts of the primaries and the bases of the exterior tail-feathers are black, and there is a patch of bare red skin around the eye. In the summer the black retains its position, but the white is mottled and barred with black and gray. The length of the adult male is rather more than 15 inches.

**Pterodactyl**, a remarkable genus of fossil lizards, peculiar to the Mesozoic strata. The careful investigations of Cuvier, however, showed that the pterodactyl was a true lizard, but possessed of the power of flight, which it performed, not by a membrane stretched over its ribs, like the living dragons, but more as in the bats, except that the wing was attached, not to several, but only to a single finger—the fifth—the others being free and short. The bones of the fifth finger were very elongated, and the last joint terminated in a long, slender, unguarded apex; the terminal joints in the other fingers were furnished with strong claws.

**Pterosauria**, an extinct order of flying Reptilia of Mesozoic age.

**Pthah**, or **Phtha**, an ancient Egyptian divinity, the creator of all things and source of life, and as such father and sovereign of the gods. He was worshiped chiefly at Memphis under the figure of a mummy-shaped male, and as a pygmy god. Equivalent to the Greek Hephestus.

**Ptolemæus**, the dynastic name of 13 kings of Egypt, who reigned from 323 to 43 B. C. The most famous was Ptolemæus Soter, who reigned from 323 to 285 B. C.

**Ptolemaic System**, the hypothesis maintained by Ptolemy in his "Almagest" that the earth was a fixed body, remaining constantly at rest in the center of the universe, with the

sun and moon revolving round it as attendant satellites.

**Ptolemy I.**, surnamed Soter, king of Egypt, founder of the Græco-Egyptian dynasty of the Lagides, was a Macedonian, supposed to be a natural son of Philip II., and became a favorite general of Alexander the Great, whom he accompanied on his expedition to Asia. On the death of his master, in 323 B. C., Ptolemy I., obtained Egypt for his province. For 20 years he was almost constantly engaged in war. He took the title of king. He saved Rhodes when besieged by Demetrius, and received the title of Soter (saviour); and after the fall of Antigonus he applied himself to the promotion of commerce, literature, science, and the arts in his own dominions. Philosophers, poets, and painters gathered to his court, and the foundations were laid of the famous Alexandrian Library and Museum. In 285 Ptolemy resigned his crown to his son, surnamed Philadelphus, and died in 283.

**Ptolemy II.**, surnamed Philadelphus (lover of his brother), king of Egypt, born in Cos, 311 B. C., was the youngest son of the preceding by his favorite wife, Berenice. He became king on the abdication of his father in 285, and had a long, and for the most part peaceful reign. He had been carefully educated, and he entered heartily into his father's plans for promoting the prosperity of his kingdom, completing the Alexandrian Library Museum, patronizing learning and learned men, founding colonies, and increasing his army and his revenue. He made a treaty of alliance with the Romans, and encouraged the resort of Jews to Egypt. According to tradition it was by his order that the Septuagint version of the Old Testament was made. Ptolemy was twice married; his second wife being his sister Arsinoë, widow of Ly-simachus. He died in 247.

**Ptolemy XII.**, Dionysius, son of Ptolemy Auletes, king of Egypt, succeeded to the throne conjointly with his sister Cleopatra, under the protection of Pompey, in 52. He became a partisan of Cæsar in the civil war, and after the battle of Pharsalia caused Pompey who sought refuge in his states, to be assassinated in 48.

Aspiring to be sole king, he then took arms against Cæsar, who had decided that Cleopatra should continue to reign with him, and was drowned in the Nile while flying from the field of battle, 47 B. C.

**Ptolemy, Claudius**, a celebrated astronomer and geographer, who flourished at Alexandria, about A. D. 140-160. He is considered the first astronomer of antiquity. He corrected Hipparchus' catalogue of the fixed stars, and formed tables by which the motions of the sun, moon and planets might be calculated and regulated. He was the first who collected the scattered and detached observations made by the ancients, and digested them into a system; this he called the "Great Construction." This great work of Ptolemy will always be valuable on account of the observations he gives of the places of the stars and planets in former times, and according to ancient astronomers that were then extant; but principally on account of the large and curious catalogue of the stars, which, being compared with modern catalogues, enables astronomers to deduce the true quantity of their apparent slow progressive motion according to the order of the signs, or of the precession of the equinoxes.

**Ptomaine**, a putrescent product of animal origin and of a basic or alkaloidal nature, closely allied to the vegetable alkaloids; a cadaveric poison. About 150 varieties of ptomaines are known, some being harmless, others very poisonous. Ordinary foods frequently undergo changes that render them harmful, and especially is this so with mussels, clams, oysters, fish, meat, sausage, milk, ice-cream, cheese and canned goods. These changes are due to the presence of ptomaines. Heat will destroy the ptomaine bacteria, but their poison is not eliminated by cooking.

**Publican**, in Roman antiquities, a collector of revenues, or farmer of the taxes consisting of tolls, tithes, harbor duties, duties for the use of pasture lands, mines, salt works, etc., in Roman provinces. From the nature of their office, and the oppressive exactions of many of their number, these officials were generally regarded by the inhabitants with detestation.

**Public Health Acts.** In the United States scientific investigation into the means for preserving health is of recent growth, though laws were enacted by the colonies for the prevention of the introduction of contagious or infectious diseases from foreign ports. State boards of health have been created in nearly all the States. In 1878 Congress passed "An Act to prevent the introduction of contagious or infectious diseases in the United States," providing that no vessel coming from a foreign port where contagious or infectious disease may exist shall enter any port of the United States, except in manner prescribed by regulations. In 1879 a National Board of Health was created by Congress; its duties were to obtain information on all matters affecting public health, and to advise the several departments of the government and the executives of the several States on all questions submitted by them. Town or city boards of health have existed for many years in all large municipalities.

**Puck**, in mediæval mythology, the "merry wanderer of the night," whose character and attributes are depicted in Shakespeare's "Midsummer Night's Dream." He was the chief of the domestic tribe of fairies.

**Puebla**, a city of Mexico; capital of the State of the same name; on a fruitful plain, 7,120 feet above sea-level, and 68 miles S. E. of Mexico City. In its vicinity are Orizaba, the famous Popocatepetl, and other lofty mountains. The city was founded in 1531; contains nearly 50 churches, a noted museum of antiquities dating from 1728; and has important manufactures and a thriving trade. It was besieged for two months and then taken by storm by the French, May 17, 1863. Pop. (1923) 76,921.

**Pueblo**, city and capital of Pueblo county, Col.; on the Arkansas river and several railroads; 118 miles S. E. of Denver; is an important railroad, mining, manufacturing, and live-stock center; has valuable coal, silver, and gold mines nearby, and large steel works and smelters; and is the seat of the State Hospital for the Insane, State Agricultural Society, and a noted Mineral Palace. Pop. (1930) 50,096.

## Pueblos

**Pueblos** (Spanish, pueblo, "village"), a semi-civilized family of American Indians in New Mexico and Arizona, dwelling in large single habitations, which are sometimes capacious enough to contain a whole tribe. These edifices—which are often five or six stories high, and from 130 to 433 yards long, with many rooms (53 to 124) on each floor—are commonly constructed of adobe or sun-dried brick; the ground floor is invariably without doors or windows, entrance being effected by a ladder leading to the second story; and indoors ladders take the place of staircases everywhere. A somewhat pyramidal aspect is given to the whole building by each successive story receding a few feet from the line of that below it. Each family of the tribe has a separate apartment, and there are also large rooms for general council chambers and for tribal dances. In New Mexico there are 19 such villages, with over 8,000 occupants, who are skillful agriculturists, employing irrigation ditches extensively, and rearing horses, cattle, and sheep. Spinning and weaving and the manufacture of pottery also are carried on. The Moquis of Arizona are a related tribe, numbering about 1,800, in seven villages built on the summit of isolated hills. The Pueblos are under Roman Catholic missionaries, and are making steady progress in civilization and education, though on their Christianity they have grafted many of their old pagan beliefs and customs, to which they obstinately cling. They were first visited by the Spaniards about 1530, at which period their habits and their habitations were very much the same as today. It is evident, however, from the wide area over which the ruins of old pueblos and remains of ancient pottery have been found, that they were at one time very much more numerous than they are now.

**Puerto Cabello**, a seaport of Venezuela, in the State of Carabobo, 78 miles W. of Caracas. It stands on a long, low narrow peninsula on the Caribbean Sea, and has a safe, deep, and roomy harbor, defended by a fort and batteries. It is the port of Valencia, which is 34 miles distant by rail. There is an active foreign trade, which averages \$6,250,000 annually;

the chief exports are coffee, cacao, indigo, cinchona, cotton, sugar, divi-divi, and copper ore. Pop. about 11,000. It was bombarded by the Germans during the recent blockade of Venezuelan ports by Germans, British and Italians.

**Pufendorf, or Puffendorf, Samuel, Baron von**, a German writer on the law of nature and nations; born in 1632. He studied theology and law at Leipsic and Jena, and in 1660 appeared his "Elements of General Jurisprudence." In 1661 he became Professor of the Law of Nature and of Nations at Heidelberg. In 1667 he published his work "The Commonwealth of Germany," which, from the boldness of its attacks on the constitution of the German empire, caused a profound sensation. In 1670 he went to Sweden, became Professor of Natural Law in the University of Lund, and brought out his chief work, "Natural Law and the Law of Nations," and in 1675 an abstract of it. In 1686 he received a summons to Berlin from Frederick William, Elector of Brandenburg, a history of whom Pufendorf wrote for the Elector's son, the first king of Prussia. In 1694 he was created a baron by the king of Sweden, and in the same year he died in Berlin. There are English translations of his principal works.

**Puff Adder**, one of the most venomous serpents of South Africa. In length, when full grown, it is from four to five feet, and is as thick as a man's arm. The head is very broad, the tail suddenly tapered; prevailing color, brown, checkered with a darker shade and with white. It usually glides along partially buried in the sand, and, when disturbed, puffs out the upper part of its body, whence its popular name. The Bosjesmans smear their arrows with its venom.

**Puff Birds**, a family resembling kingfishers in form, but living on insects like fly catchers; they also resemble the bee eaters, and are found only in South and Central America.

**Puffin**, a common sea bird, with many popular names—bottlenose, coulterneb, pope, seaparrot and tammy norie, with others that are only locally known. By extension, the name is applied to other species of the genus.

## Puffin

The common puffin is rather larger than a pigeon; plumage glossy black above, under surface pure white; feet orange-red; bill very deep, and flattened laterally, parti-colored—red, yellow, and blue, and grooved during the breeding season, and undergoing a kind of moult at its close—a peculiarity shared by other species.

**Pugilism**, the practice of boxing or fighting with the fists covered with padded gloves weighing from six to twelve ounces each.

Man being instinctively a pugnacious animal, and the fist being the simplest and most natural weapon, it may be taken for granted that pugilism, as a mode of settling differences, is coeval with man himself. It formed one of the earliest of the athletic games of the Greeks; and we find the Greek poets describing their heroes and gods as excelling in the pugne. Boxing for men was introduced in the Olympic games in the 23d Olympiad, and for boys in the 37th Olympiad. With the exception of a girdle about the loins, the ancient pugilist fought nude. In the United States pugilism as an athletic exercise is permitted, but the brutal exhibitions of the prize ring are generally prohibited by law.

**Pulaski, Count Casimir**, a Polish patriot and military officer, who participated in the war of the American Revolution; born in 1747. His father, a Polish nobleman, was the organizer of the celebrated Confederation of Bar, in hostility to Russia, and for the liberation of his country, in which Casimir eagerly joined, carrying on a desultory warfare with varied success till the coalition of Russia, Austria, and Prussia completed the conquest of Poland. His father and brothers being killed, Casimir escaped with difficulty into Turkey, whence he proceeded by way of France to join the Americans, then fighting for independence, bearing recommendations from Franklin to Washington, whom he joined in 1777. Entering as a volunteer, he so distinguished himself at the battle of Brandywine as to be promoted by Congress to a cavalry command, with the rank of Brigadier-General, which command, however, he resigned five months after, in 1778. He afterward organized an independent

corps of cavalry and light infantry, with which he rendered effectual service under General Lincoln, in South Carolina, in 1779, and in the siege of Savannah, Ga., where, in an assault on the latter place, he was mortally wounded. He died in 1779.

**Pulaski, Fort**, a fortification at the mouth of the Savannah river. Seized by the Confederates, Jan. 3, 1861, it was besieged and taken by the Union forces, April 12, 1862.

**Pulgar, Fernando de**, a Spanish writer in the latter part of the fifteenth century. He wrote a "Chronicle" of the reign of Ferdinand and Isabella; "Notable Men of Castile"; a commentary on the ancient "Couplets of Mingo Revulgo."

**Pulitzer, Joseph**, an American journalist; born in Budapest, Hungary, April 10, 1847. When quite young he came to the United States and served in the Civil War. In 1883 he purchased the New York "World," then on the verge of failure, but he built it up till it became one of the most substantial papers in the city. In 1903 he gave \$2,000,000 to Columbia University, New York city, to establish a "School of Journalism." He died Oct. 29, 1911.

**Pullman, George Mortimer**, an American inventor; born in Chautauqua co., N. Y., March 3, 1831; learned the cabinetmaker's trade; settled in Chicago; studied for many years the problem of making journeys by rail more comfortable; and as a result invented the Pullman palace car. In 1863 he started building these cars, and in 1867 organized the Pullman Palace Car Company. He also invented the vestibule train and founded the town of Pullman, Ill., in 1880. He died in Chicago, Oct. 19, 1897.

**Pulpit**, a raised place or desk in a church, from which the preacher delivers his sermon. They are now generally made of wood, but were formerly also made of stone, richly carved and ornamented. Hence, used figuratively, for preachers generally or preaching; the teaching of preachers.

**Pulque**, a vinous beverage, made in Mexico, by fermenting the juice of the various species of the agave. It resembles cider, but has a disagreeable odor, like that of putrid meat.



## Pulse

**Pulse**, in physiology, the beat or shock felt in any artery when slight pressure is made on it, caused by the systole of the heart. At birth the number of beats is about 140, at the end of the first year 120, at the end of the second 110; during middle life between 70 and 80, and in old age usually a little more. It is slower in man than in woman, and is also affected by the position of the body.

**Pulse**, a general name for leguminous plants or their seeds; such as beans, peas, etc.

**Pulsometer**, a form of pump for raising water, by the condensation of steam, in a vessel situated at such elevation above the water supply that the atmospheric pressure will raise the water to the chamber and operate the valves. Its most common use is to fill steam boilers.

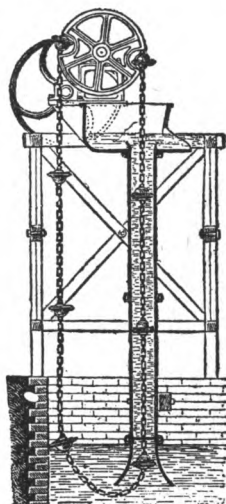
**Puma**, the cougar of the French, the lion of the South Americans, and the panther or "painter" of the trappers. It is the largest feline of the New World, measuring 40 inches from the nose to root of tail, which is about 20 inches more; the head is small, mane absent; general color of upper surface tawny yellowish-brown, varying in intensity in different individuals; lower parts of the body and inner surface of limbs dirty white. The young, when born, are spotted with brown, and the tail is ringed. The puma is destructive, and slays far more than it can eat, but rarely, if ever, attacks man, and may be tamed with little difficulty. Edmund Kean had one which followed him about like a dog. It ranges from Canada to Patagonia, being most numerous in the forest districts of Central America.

**Pumice**, a very porous, or cellular, froth-like rock, of extreme lightness, floating on water. Structure, web-like, consisting of vitreous threads either intimately interwoven or parallel. Like the more compact forms of vitreous lavas, it varies much in chemical composition, which, however, is mostly that of trachytic rocks. It owes its cellular structure to the enormous expansion of aqueous vapor consequent on the relief from pressure during the extrusion of vitreous lavas at the earth's surface. In commerce, pumice stone. It is imported from the Lipari Isles, and is used for polishing metals

## Pumpelly

and marble, and smoothing the surface of wood and pasteboard. It is said to be a good glaze for pottery.

**Pump**, a machine, engine, or device, consisting of an arrangement of a piston, cylinder, and valves, for raising water or other liquid to a higher level, or for compressing or exhausting air and other gases. There are numerous varieties of pumps differing more or less in construction, according to the purposes for which each is intended, but the most important are the suction pump, the lifting or lift pump, the force pump, and the centrifugal or rotary pump.



CHAIN PUMP.

**Pumpelly**, Raphael, an American geologist; born in Oswego, N. Y., Sept. 8, 1837. In his early life he conducted explorations for the governments of Japan and China; was professor at Harvard for several years; and from 1879 to 1892 geologist in charge of the Archæan division of the United States Geological Survey. His chief works are: "Geological Researches in China, Mongolia, and Japan," "Across America and Asia," "Mining Industries of the United States," etc. Died, 1923.

## Pumpkin

**Pumpkin**, a climbing plant and its fruit, originally from Astrachan, but widely cultivated in America. It has rough leaves, the flowers large, solitary. It is raised in the open air. The pumpkin, cooked in various forms, is a favorite dish in America, and especially in the Northeastern States of the Union, where the pumpkin pie is almost indispensable at the Yankee housewife's table. Boiled and mashed it is an excellent side dish.

**Pun**, a play on words, the wit of which depends on a resemblance in sound between two words of different and perhaps contrary meanings, or on the use of the same word in different senses, etc.

**Punch**, with his wife Judy and dog Toby, the chief characters in a popular comic puppet show, of Italian origin, the name being a contraction of Pulcinello, for Pulcinello, the droll clown in Neapolitan comedy. The exhibition soon found its way to other countries.

**Punch**, or the **London Charivari**, the chief of English comic journals, a weekly magazine of wit, humor, and satire in prose and verse, illustrated by sketches, caricatures, and emblematic devices. It was founded in 1841, the first number appearing July 17 of that year, and, under the joint editorship of Henry Mayhew and Mark Lemon, soon became a household word, while ere long its satirical cuts and witty rhymes were admitted a power in the land. "Punch" is recognized as an English institution.

**Punctuation**, the act, art, or method of punctuating or pointing a writing or discourse; the act, art, or method of dividing a discourse into sentences, clauses, etc., by means of points or stops. Punctuation is performed with four points or marks, viz., the period (.), the colon (:), the semicolon (;), and the comma (,). The other points used in composition are the note of interrogation or inquiry (?), and of exclamation, astonishment, or admiration (!). The first printed books had only arbitrary marks here and there, and it was not till the 16th century that an approach was made to the present system by the Manutii of Venice.

**Punic**, the language of the Carthaginians. It was an offshoot of Phœ-

nician, belonging to the Canaanitish branch of the Semitic tongues.

**Punic Wars**, three great wars between the Romans and the Carthaginians. The first (264-241 B. c.) was for the possession of Sicily, and ended by the Carthaginians having to withdraw from the island. The second (218-202 B. c.), the war in which Hannibal gained his great victories in Italy, was a death struggle between the two rival powers; it ended with decisive victory to the Romans. The third (149-146 B. c.) was a wanton one for the destruction of Carthage, which was effected in the last-named year.

**Punishment**, a penalty inflicted on a person for a crime or offense, by the authority to which the offender is subject; a penalty imposed in the enforcement or application of law. The punishments usual for criminal offenses in the United States are death by hanging or electricity, or by shooting, imprisonment with and without hard labor, solitary confinement, detention in a reformatory school, subjection to police supervision, imposition of fines, and putting under recognizance. In a number of the States the death penalty is now inflicted by electrocution, and in Delaware whipping is resorted to as a punishment for certain offenses. See CAPITAL PUNISHMENT.

**Punjab**, an extensive territory in the N. W. of India, most of it under direct Anglo-Indian authority, and ruled by a lieutenant-governor, a large portion of the remainder constituting the protected State of Kashmir.

**Punt**, a large, square-built, flat-bottomed vessel, without masts, used as a lighter for conveying goods, etc., and propelled by poles. Also, a small, flat-bottomed boat, with square ends, used in fishing, and propelled by poles.

**Punta Arenas**, the chief port on the Pacific of Costa Rica; in province of same name; pop. (1921 Est.) 3,700.

**Pupa**, or **Pupe**, in entomology, the third stage in the development of an insect. On reaching its full growth the larva ceases to eat, and some time later becomes encased in a closed shell or case, whence after a certain lengthened period, which typically is one of repose, it emerges as a perfect insect.

## Pupa

**Pupin, Michael Idvorsky**, an American scientist; born in Idvar, Hungary, Oct. 4, 1858; was graduated at Columbia University in 1883; studied at the University of Berlin; and was appointed Adjunct Professor of Mechanics at Columbia University in 1889. In 1901 he announced the discovery of a new method of ocean telephony. He was a member of the American Mathematical Society, American Philosophical Society, etc. He wrote "Propagation of Long Electrical Waves"; "Wave Propagation Over Non-Uniform Conductors"; etc.

**Purana**, the last great division of Hindu sacred literature.

**Purcell, Henry**, an English composer; born in 1658. In 1680, probably, he composed for a private seminary "Dido and Eneas," which has been called the first genuine English opera, but has never been produced on the public stage. For some years after he became organist of Westminster Abbey he composed mainly anthems and sacred music, all of great excellence. In 1690 he wrote the music for Dryden's version of "The Tempest." In 1691 he produced the music to Dryden's "King Arthur," which, though considered his dramatic masterpiece, was not published till 1843. In 1694 he wrote, for St. Cecilia's Day, his "The Jubilate" and "Te Deum," and in 1695 the music to "Bonduca," in which was "Britons, Strike Home." Purcell was equally great in church music, chamber music, and music for the theater. He died in 1695, and was buried in Westminster Abbey.

**Purchase**, in law, the suing out and obtaining a writ; the obtaining or acquiring the title of lands and tenements by money, deed, gift, or any means except descent. In mechanics, a means of increasing applied power; any mechanical hold, advantage, power, or force applied to the raising or removing of heavy bodies; mechanical advantage gained by the application of any power.

**Purdue University**, a coeducational non-sectarian institution in Lafayette, Ind.; founded in 1874.

**Purgatory**, in Roman theology, a place in which souls who depart this life in the grace of God suffer for a time, because they still need to be

cleansed from venial, or have still to pay the temporal punishment due to mortal sins, the guilt and eternal punishment of which have been remitted.

**Purification**, a Jewish rite. It was mainly the one through the performance of which an Israelite was readmitted to the privilege of religious communion, lost through uncleanness. The chief varieties of such uncleanness, and the methods of purification from it required, are detailed in Lev. xii., xiv., xv., and Numb. xix.

**Purim**, the Festival of Lots, which was instituted by Mordecai and is celebrated to this day by the Jews on the 14th and 15th of the month Adar (March), in commemoration of their wonderful deliverance from the destruction with which they were threatened by Haman. On these festive days the book of Esther is read, presents are interchanged, and gifts are sent to the poor.

**Puritan**, the name given, at first perhaps in contempt, to those clergymen and others in the reign of the English Queen Elizabeth, who desired a simpler, and what they considered to be a purer, form of worship than the civil and ecclesiastical authorities sanctioned. New England was settled very largely by the Puritans. Also, one who has severely strict notions as to what is proper or who is strict in his religious duties.

**Purple**, a secondary color, compounded by the union of the primaries blue and red.

**Purples, Ear Cockle, or Peppercorn**, a disease affecting the ears of wheat. Infected grains assume a dark-green color, which soon deepens to a black, and become rounded like small peppercorns. The husks open, and the diseased grains are found to contain no flour, but a moist substance.

**Purse Crab**, a name for decapod crustaceans allied to the hermit crabs. A species, the robber crab, found in the Mauritius and the more E. islands of the Indian Ocean, is one of the largest crustaceans, being sometimes two to three feet in length. It resides on land, while paying a nightly visit to the sea, often burrowing under the roots of trees, lining its hole with the fibers of the cocoanut husk and living

on the nuts, which (according to some writers) it climbs the trees to procure, and the shells of which it certainly breaks with great ingenuity.

**Purser**, on shipboard, the officer whose duty is to keep the accounts of the ship to which he is attached. In mining, the paymaster or cashier of a mine, and the official to whom notices of transfer are sent for registration in the cost-book.

**Purslane**, a plant, with fleshy succulent leaves, naturalized throughout the warmer parts of the world. Purslane was formerly more used than at present in salads as a pot herb, in pickles, and for garnishing. It has anti-scorbutic properties.

**Purves, George T.**, an American clergyman; born in Philadelphia, Pa., Sept. 27, 1852; was graduated at the University of Pennsylvania in 1872 and at the Princeton Theological Seminary in 1876; was Professor of New Testament literature and Exegesis at the Princeton Theological Seminary in 1892-1900, when he accepted a call to the Fifth Avenue Presbyterian Church, New York city. He wrote "The Apostolic Age"; etc. He died in New York city, Sept. 24, 1901.

**Pus**, in physiology and pathology, the product of suppuration, a thick, viscid, yellow fluid, consisting of liquor puris, pus corpuscles, and other histological particles.

**Pusey, Caleb**, an American Quaker colonist; born in Berkshire, England, about 1650. He came with Penn's company to America in 1682, erected the first mills in the province, held many high places in civil affairs, and was a noted controversialist writer of his day. He published a great number of pamphlets and articles in defense of his creed. He died in Chester co., Pa., Feb. 25, 1727.

**Pusey, Edward Bouverie**, an English theological writer, a leader of the Anglo-Catholic (Tractarian) party in the Established Church; born near Oxford in 1800. He published: "The Holy Eucharist a Comfort to the Penitent," a sermon which resulted in his suspension for three years; two sermons on "The Entire Absolution of the Penitent," equally revolutionary. Of his larger works the most important are: "The Doc-

trine of the Real Presence"; and "The Real Presence of the Body and Blood of Christ the Doctrine of the English Church." Died Sept. 16, 1882.

**Pushkin, Alexander Sergeyevitch, Count**, the master poet of Russia; born at St. Petersburg in 1799; died 1837. He was government official, and in 1825 was appointed Imperial historiographer. His works embrace poems, dramas, novels, and histories.

**Putnam, Frederick Ward**, an American scientist; born in Salem, Mass., April 16, 1839; was graduated at Harvard University in 1862; became chief of the Department of Ethnology at the World's Columbian Exposition in Chicago in 1893. He was a member of numerous American and foreign societies, and had received the French Cross of the Legion of Honor. He died Aug. 14, 1915.

**Putnam, George Haven**, an American publisher and author, son of George P.; born in London, England, April 2, 1844. He entered the publishing business in 1866, and became the head of the firm of G. P. Putnam's Sons, New York. His works include: "International Copyright" (1879); "Books and their Makers during the Middle Ages" (1896), etc.

**Putnam, George Palmer**, an American publisher and author; born in Brunswick, Me., Feb. 7, 1814. In 1848 he established the publishing house now conducted under the name of G. P. Putnam's Sons; and also founded "Putnam's Magazine," which was subsequently merged with "Scribner's Monthly." His works include: "The Tourist in Europe"; "The World's Progress" (1850); "Ten Years of the World's Progress"; etc. He died in New York, Dec. 20, 1872.

**Putnam, Herbert**, an American librarian; born in New York city, Sept. 20, 1861; was graduated at Harvard in 1883; studied at the Columbian Law School; was admitted to the Minnesota bar in 1886; librarian of the Boston Public Library in 1887-1891; and was appointed librarian of Congress in 1899.

**Putnam, Israel**, an American general in the Revolutionary War; born in Danvers (then part of

Salem), Mass., in 1718. He was destined to the occupation of a farmer, and continued in that vocation till the French and Indian war broke out, when, at the age of 36, he took service in the English army, and from his known courage and energy, received the command of a company of light troops, or "rangers." When the dispute between this country and England commenced, he was following the quiet life of a farmer and tavern keeper; but the first blood that was shed aroused all his energy. He was created Major-General by Congress, and at Bunker Hill, New York, and during Washington's retreat through New Jersey, he showed himself one of the bravest and most devoted of the patriot leaders. But in 1779 he was stricken with paralysis, and was prevented from participating in the final triumphs of the national cause. His character is well depicted by the inscription on his tomb: "He dared to lead where any dared to follow." He died in 1790.

**Putnam, Mrs. Mary (Lowell)**, an American historical writer, sister of James Russell Lowell; born in Boston, Mass., Dec. 3, 1810. In 1832 she married Samuel R. Putnam, a merchant of Boston. Besides a translation from the Swedish, and numerous magazine articles, she published: "History of the Constitution of Hungary"; and two dramatic poems on the subject of slavery. She died in Boston in June, 1898.

**Putnam, Mrs. Sarah A. Brock**, an American novelist and writer; born in Madison Courthouse, Va., about 1845. In 1883 she married the Rev. Richard Putnam, of New York. Her works include: "Richmond during the War"; "The Southern Amaranth"; etc.

**Putnam, William Le Baron**, an American jurist; born in Bath, Me., May 12, 1835; was graduated at Bowdoin College in 1855 and admitted to the bar in 1858; practised in Portland, Me., till 1892; was a member of a commission to arrange with the British government the rights of American fishermen in Canadian waters in 1887; served also as a commissioner under the treaty of Feb. 6, 1896, between the United States and Great Britain; and was appointed a

judge of the United States Circuit Court in 1892. Died, 1918.

**Putnam, Fort**, the principal defense of West Point during the Revolution. Now in ruins.

**Putrefaction**, the apparently spontaneous decomposition of organic substances, especially those rich in nitrogen. It differs from fermentation in being accompanied by the evolution of fetid and noxious gases. In the process of putrefaction, organic bodies of a higher order are changed, sometimes into lower organic compounds, sometimes into inorganic compounds, as ammonia, sulphuretted hydrogen, etc., and sometimes into simple substances, as hydrogen and nitrogen.

**Puts and Calls**, terms used in American stock dealings. The trade in privileges is something which is scarcely understood outside of Board of Trade and Stock Exchange circles. For \$1 per 1,000 bushels a trader can purchase the privilege to "put" (sell) or "call" (buy) from the seller of the privilege at a stipulated price and within a stipulated time. The ordinary privileges are sold one day to be good to the close of the next session. In inactive markets the "put" and "call" prices may be close together and close to the market price of the property. They are countenanced by the State of New York and are a regular feature in the New York Stock Exchange. In Illinois they are specifically classed as gambling operations. The theory of "privileges" is that they are a species of insurance by which an operator can protect himself against market fluctuations. A trader who is "short" in the market can protect his position to a certain degree by buying "calls"; a "long" can prevent losses in the same degree by buying "puts." The insurance proposition is a theory, however, as "privileges" more often serve to originate new trades than to serve as an insurance on existing business conditions.

**Pyæmia, or Pyemia**, a diseased condition in which the blood is poisoned by pus or by some of its constituents; blood poisoning; septicæmia.

**Pycnogonum**, a genus of Arachnida, the sea spiders. Some species are



parasitic upon fishes and other marine animals, but the common species is free when adult, and does not appear to be parasitic during any period of its existence. One species attaches itself parasitically to the whale.

**Pygmalion**, in Greek mythology, grandson of Agenor, King of Cyprus. He fell in love with an ivory statue of a young maiden he himself had made, and prayed to Aphrodite to give it life. His prayer was granted, on which he married the maiden.

**Pygmy**, or **Pigmy**, in classical mythology, one of a fabulous nation of dwarfs dwelling somewhere near the shores of the ocean, and maintaining perpetual wars with the cranes. Ctesias represented a nation of them as inhabiting India. Other ancient writers believed them to inhabit the Indian islands; Aristotle places them in Ethiopia, Pliny in Transgangetic India. A race of pygmies has been discovered in Central Africa.

**Pyle, Howard**, an American illustrator and author; born in Wilmington, Del., March 5, 1853. He was an illustrator for periodicals, and became popular also as a writer of juvenile literature. His works include: "Buccaneers and Marooners of America" (1891). He died Nov. 9, 1911.

**Pylorus**, the small and contracted end of the stomach leading into the small intestines.

**Pym, John**, an English statesman and leader of the popular party during the reigns of James I. and Charles I.; born in Somersetshire, England, in 1584. He studied at Oxford and became famous as a lawyer. He entered Parliament in 1614, and during the reign of James he attained great influence by his opposition to the arbitrary measures of the king. In 1626 he took part in the impeachment of Buckingham and was imprisoned. In the Short Parliament of 1640 Pym and Hampden were exceedingly active as leaders of the popular party, and in 1641 Pym was offered the chancellorship of the exchequer. He impeached Strafford, and at his trial appeared as accuser. He was the main author of the Grand Remonstrance, the final appeal presented in 1641, and one of the five members to arrest whom the king went to the House of

Commons in January, 1642. When civil war became inevitable Pym was appointed one of the committee of safety, and while he lived was active in resisting the negotiations of any peace with the king which did not secure the liberties of the subject and the supremacy of Parliament. It was mainly his financial skill that enabled the parliamentary army to keep the field. In November, 1643, he was made lieutenant-general of ordnance, and in the following month he died, and was buried in Westminster Abbey.

**Pyramid** in Egyptian antiquities, a solid structure substantially invariable in form, viz., a simple mass resting on a square or sometimes approximately square base, with the sides facing with slight deviations toward the four principal winds, and tapering off gradually toward the top to a point or to a flat surface, as a substitute for an apex. The proportion of the base to the height is not always the same, nor is the angle of inclination uniform. The pyramids were constructed in platforms, and then reveted or coated with blocks or slabs of granite, as may still be observed in incomplete pyramids. Recently the theory has been maintained that in the case of the largest pyramids, a smaller one was erected as a nucleus, and subsequently enveloped by another layer. The interior of these massive structures contains narrow passages, and some totally dark halls or chambers, and probably served as the burial places of the kings who had caused them to be constructed. The entrance to these buildings is raised considerably above the level of the base, and was blocked up by a portcullis of granite, so as to be on ordinary occasions inaccessible. In the pyramid of Cheops, the entrance is raised about 47 feet, 6 inches above the base. The pyramids of Egypt begin immediately S. of Cairo, and continue S. at varying intervals for nearly 70 miles. The largest is that of Cheops, at Ghizeh, standing on a base each side of which was originally 764 feet long, but owing to the removal of the coating is now only 746 feet. Its perpendicular height, according to Wilkinson, was originally 480 feet, 9 inches, present height, 460 feet. The principal chamber, the so-called Crowning Hall or

King's Chamber, is 34 feet, 3 inches long, and 17 feet, 1 inch wide. Its roof is formed of massive blocks of granite, over which, with a view to support the weight, other blocks are laid, with clear intervals between. According to Herodotus, the erection of this pyramid employed 100,000 men for 20 years.

In Mexican antiquities, the Teocalis, or Houses of the Gods, which have come down from Aztec times, are four-sided pyramids rising by terraces to a considerable height. A notable group of such erections still exist at Teotihuacan, about 20 miles N. E. of the City of Mexico. There are two large pyramids, with some hundred smaller ones. The base of the largest is 900 feet long, its height 160 feet; the height of the second is 130 feet. One is dedicated to the sun, the other to the moon. A yet larger one is at Cholula; its base is 1,488 feet long, its height 178 feet. All the Mexican pyramids face the cardinal points. Hence, applied to any mass or heap more or less resembling a pyramid in form.

**Pyrenees**, an extensive mountain range in the S. of Europe, dividing France from Spain, and extending almost in a straight line from St. Sebastian, on the Bay of Biscay, to Cape Creux, on the Mediterranean. Length 270 miles, with a breadth from 50 to 100 miles.

**Pyrites**, an isometric mineral occurring frequently crystallized, also massive, in mammillary forms with fibrous structure, and stalactitic with crystalline surface. Luster, metallic, splendid; color, pale, brass-yellow; streak, greenish-black; opaque; fracture conchoidal uneven; brittle; strikes fire when struck with a hammer. Composed of sulphur and iron. It is distributed in rocks of all ages, either as crystals, crystal-grains, or nodules, also in metalliferous veins.

**Pyrrhic**, a species of warlike dance, which is said to have been invented by Pyrrhus to grace the funeral of his father Achilles. It consisted chiefly in such an adroit and nimble turning of the body as represented an attempt to avoid the strokes of an enemy in battle, and the motions necessary to perform it were looked on as a kind of training for actual warfare.

This dance is supposed to be described by Homer as engraved on the shield of Achilles. It was danced by boys in armor, accompanied by the lute or lyre. Also a metrical foot consisting of two short syllables.

**Pyrrhus**, King of Epirus, being obliged, on the murder of his father, to seek safety by flight, found a home, parent, and tutor in Glaucus, King of Illyria, where he remained for several years, till old enough to maintain his own right, and ascended his father's throne, 295 B. C. In 281 B. C., he made war on the Romans, having been called to the assistance of the Samnites, and, in a desperate battle fought on the banks of the Syris, in Calabria, totally defeated the Roman army; yet, so dearly was this glory bought, that Pyrrhus exclaimed "Another such victory will ruin me." After several signal advantages, the Romans at length triumphed, and Pyrrhus, sustaining many disasters, returned to Greece, and, in a subsequent war with the Argives, was killed, by a tile thrown on his head from the roof of a house, as he entered Argos, 273 B. C.

**Pythagoras**, the celebrated Greek philosopher, was born in Samos, probably about 580-570 B. C. He was the son of Mnesarchus, and, perhaps, a disciple of Pherecydes. He is said to have traveled extensively, especially in Egypt, and to have been initiated in the most ancient Greek mysteries. He attached great importance to mathematical studies, and is believed to have made several important discoveries in geometry, music, and astronomy. He ultimately settled, between 540-530 B. C. at Crotona, one of the Greek cities of Southern Italy. There he set himself to carry out the purpose of instituting a society through which he might exert an influence on political affairs, and especially in opposition to democratic and revolutionary movements. His teachings relating to these subjects became at length the occasion of a popular rising against the Pythagoreans at Crotona, 504 B. C.—the house in which they were assembled was burned, many perished and the rest were exiled. Similar tumults with similar results, took place in other cities and Pythagoras himself is

believed to have died soon after, at Metapontum. Among the doctrines of Pythagoras are the following: that numbers are the principles of all things; that the universe is a harmonious whole (kosmos), the heavenly bodies by their motion causing sounds (music of the spheres); that the soul is immortal, and passes successively into many bodies (metempsychosis); and that the highest aim and blessedness of man is likeness to the Deity. He left no written account of his doctrines; they were first committed to writing by Philolaus. Pythagoras is said to have been the first who took the title of philosopher, and the first who applied the term kosmos to the universe. He shares with Thales and Xenophanes the high distinction of starting the problem of physical science. He died in Metapontum, Magna Græcia, about 500 B. C.

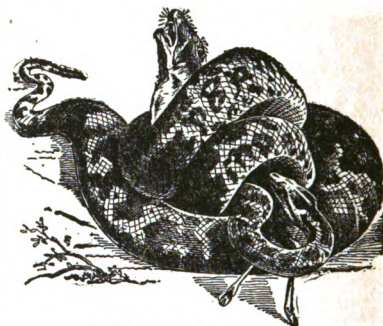
**Pytheas**, a famous navigator of the Greek colony of Massilia, now Marseilles; supposed to have lived about the time of Alexander the Great (say 330 B. C.). He is reputed to have sailed along the west coast of Europe, entered the English Channel, and traveled some distance in Britain, then, continuing his journey northward, to have arrived at Thule (supposed to be Iceland). In a second voyage he entered the Baltic, where he proceeded as far as a river which he called Tanais, and on the banks of which amber was found. He is mentioned by Strabo, Pliny, and others.

**Pythian Games**, one of the four great national festivals of the Greeks, held in the Crissean plain, near Delphi (anciently called Pytho), said to have been instituted by Apollo after vanquishing the snaky monster, Python, and celebrated in his honor every four years.

**Pythias, Knights of**, a benevolent and friendly order, founded during the Civil War, and now flourishing in various parts of the world. The order is very strong in the United States. Justus H. Rathbone founded Washington lodge No. 1 in Washington, in December, 1864. On Jan. 1,

1924, the total membership of the order was 857,820. Membership of the Uniform Rank (military branch), 17,529. Membership of the Endowment Rank (life insurance branch), 70,952, representing an endowment of \$96,271,082. Address of Supreme Keeper of Records, Minneapolis.

**Python**, in Greek mythology, a celebrated serpent which destroyed the people and cattle about Delphi, and was slain by Apollo. In zoölogy, a genus and family of serpents allied to the family Boidæ or Boas. They are not venomous, but kill their prey by compression. The pythons are of enormous size, sometimes attaining a length of 30 feet. They are found in India and in the islands of the Eastern Archipelago, in Africa and in Australia. A rudimentary pelvis and traces of hinder limbs exist in the pythons, these structures terminating externally in a kind of a hooked claw. The head exceeds the neck in thick-



**PYTHON: MOLURUS.**

ness, and the mouth is extremely large. Aided by their prehensile tails and rudimentary hinder limbs, the pythons suspend themselves from the branches of trees and lie in wait near water for animals which come to drink. The genus Python contains various species, the best known of which is the West African python (*P. sebae*), common in menageries. The female python hatches her eggs by the heat of her body.

# Q



**q**, the 17th letter and the 13th consonant of the English alphabet, a consonant having only one sound, that of k or c. It is always followed by u, and as this combination can be represented by kw (or k when u is silent), q is a superfluous letter.

**Quackenbos, George Payn**, an American educator; born in New York city, Sept. 4, 1826; was graduated at Columbia College in 1843 and for many years conducted a large collegiate school in his native city. He was author of "First Lessons in Composition"; "Advanced Course of Rhetoric and Composition"; etc. He died in New London, N. H., July 24, 1881.

**Quackenbos, John Duncan**, an American physician; born in New York, N. Y., April 22, 1848; was graduated at Columbia College in 1866 and at the College of Physicians and Surgeons in 1871; began practice in New York; became Adjunct Professor of the English Language and Literature at Columbia College in 1884; Professor of Rhetoric in Barnard College in 1891-1893. He then became a specialist in mental diseases and lectured extensively on scientific and literary topics.

**Quackenbush, Stephen Platt**, an American naval officer; born in Albany, N. Y., Jan. 23, 1823; joined the navy in 1840; promoted lieutenant-commander in 1862; had charge of various vessels in blockading fleets during the Civil War; participated in the action at Elizabeth City and Newbern, N. C., captured the "Princess Royal" containing a cargo of machinery for making projectiles, quinine and engines for an iron-clad in course

of construction in Richmond; and won distinction in other operations. He was retired with the rank of rear-admiral in 1885. He died in Washington, D. C., Feb. 4, 1890.

**Quadrangle**, a square or four-sided court or space surrounded by buildings, as often seen in the buildings of a college, school, etc. In geometry, a figure having four angles, and consequently four sides.

**Quadrant**, in architecture, the same as quadrangle. In geometry, the fourth part of a circle; the arc of a circle containing 90°; the space included between such arc and two radii drawn from the center to the extremities of the arc. Nautically, an instrument for making angular measurements. So called from its embracing an arc of 90° or somewhat more. Formerly much employed in making astronomical observations. It is now superseded by the sextant.

**Quadrature**, the state of being quadrate or square; a square space. In astronomy, the position of one heavenly body with respect to another 90° distant, as the moon when midway between the points of opposition and conjunction. In geometry, the act of squaring; the reducing of a figure to a square.

**Quadrilateral**, the name given in history to the four fortresses of North Italy—Mantua, Verona, Peschiera, and Legnago—which form a sort of outwork to the bastion of the mountains of the Tyrol, and divide the N. plain of the Po into two sections by a most powerful barrier.

**Quadrille**, a dance consisting of five figures or movements, executed by four sets of couples, each forming the side of a square. Also, the music



## Quadroon

composed for such a dance; and, a game of cards played by four persons with 40 cards.

**Quadroon**, or **Quarteron**, a person who is one-quarter negro and three-quarters white; that is, one of whose grandparents was white and the other negro; and one of whose immediate parents was white and the other mulatto.

**Quadrumania**, in zoölogy, an order of Mammalia, founded by Cuvier, and containing the monkeys, apes, baboons, and lemurs. The earliest known remains are those of *Lemuravus*, from the Eocene of New Mexico.

**Quadruped**, the name popularly applied to those higher vertebrate animals which possess four developed limbs. The name is usually restricted to four-footed mammals.

**Quadruple Alliance**, an alliance, so called from the number of the contracting parties, concluded in 1718 between Great Britain, France, and Austria, and acceded to by Holland in 1719, for the maintenance of the peace of Utrecht. The occasion of the alliance was the seizure by Spain of Sardinia in 1717, and Sicily in 1718, both of which she was forced to give up. Another quadruple alliance was that of Austria, Russia, Great Britain, and Prussia, in 1814, originating in the coalition which had effected the dissolution of the French empire.

**Quæstor**, in Roman history, two *quæstores parricidii*, who acted as public prosecutors in cases of murder, or any capital offense, existed in Rome during the period of the kings. Two *quæstores classici*, who had charge of the public money, were first appointed about 485 B. C. They also had charge of the funds of the army, to which they were paymasters. The number of *quæstores* was increased to eight, 265 B. C. Sylla raised the number to 20, and Julius Cæsar to 40. During the time of the emperors their number varied; and from the reign of Claudius I. (41-54) it became customary for *quæstores*, on entering office, to give gladiatorial spectacles to the people; so that none but the wealthiest Romans could aspire to the office.

**Quagga**, a striped wild horse of South Africa, now nearly, if not entirely extinct.

## Quaker City

**Quail**, a small game bird; the Virginia species is common in North America, and so far south as Honduras. It is larger than the European quail, and is better eating. The California crested quail is another American species. The quail, genus *Coturnix*, is widely distributed over the Eastern Hemisphere, visiting Europe in early summer and returning S. in the au-



QUAIL: *LOPHORTYX CALIFORNICUS*.

turn, when immense numbers are caught and fattened for the market. Length about seven inches, general color reddish-brown, with buff streaks on the upper surface; throat rufous; head, dark brown above, striped with ochreous white, sides reddish-brown, lower parts pale buff, fading into white on belly. Color less bright in the hen bird, and the rufous tinge absent from the throat. They nest on the ground, laying from 9 to 15 pyriform, yellowish-white eggs, blotched with dark-brown. The males are polygamous and extremely pugnacious.

**Quaker City**, Philadelphia, which was planned and colonized by William Penn and other members of the Society of Friends.



**Quakers.** See Friends, Society of.

**Quamash,** the North American name of a plant of the lily family with an edible bulb. These bulbs are much eaten by the Indians, and are prepared by baking in a hole dug in the ground, then pounding and drying them into cakes for future use.

**Quantity,** in grammar and prosody, the measure of a syllable or the time in which it is pronounced; the metrical value of syllables as regards length or weight in their pronunciation. In logic, the extent to which the predicate in a proposition is asserted of the subject.

In mathematics, anything that can be increased, diminished, and measured. Thus, number is a quantity; time, space, weight, etc., are also quantities. In mathematics, quantities are represented by symbols, and for convenience these symbols themselves are called quantities. In algebra, quantities are distinguished as known and unknown, real and imaginary, constant and variable, rational and irrational. Real quantities are those which do not involve any operation impossible to perform; variable quantities are those which admit of an infinite number of values in the same expression; rational quantities are those which do not involve any radicals.

**Quarantine,** the period (originally 40 days) during which a ship coming from a port suspected of contagion, or having a contagious sickness on board, is forbidden intercourse with the place at which she arrives. Quarantine was first introduced at Venice in the 14th century. It is now required to be performed in almost every important country except Great Britain. By act of the United States Congress passed in 1879 national quarantine stations were established; and it is made a misdemeanor punishable by fine or imprisonment, or both, for the master, pilot, or owner of any vessel entering a port of the United States in violation of the act, or regulations framed under it. During the period of quarantine, all the goods, clothing, etc., that might be supposed capable of retaining infection, are subjected to a process of disinfection, which is a most important part of the quarantine system.

**Quarry,** a place, pit, or mine where stones are dug out of the earth, or are separated from the mass of rock by blasting. The term mine is generally confined to pits or places whence coal or metals are taken; quarry to those from which stones for building, etc., as marble, slate, etc., are taken. A mine is subterranean, and reached by a shaft; in a quarry the overlying soil is simply removed.

**Quart,** the fourth part of a gallon; two pints; the United States dry quart contains 67.20 cubic inches, the fluid quart 57.75 cubic inches; the English quart contains 69.3185 cubic inches.

**Quarter,** a measure of weight, equal to the fourth part of a hundred-weight—i. e., to 28 pounds avoirdupois. As a measure of capacity, for measuring grain, etc., a quarter contains eight bushels. The common American term for twenty-five cents, being a quarter of a dollar.

**Quarter Deck,** in nautical language, a deck raised above the waist and extending from the stern to the mainmast. It is especially a privileged portion of the deck, being the promenade of the superior officers or of the cabin passengers. The windward side is the place of honor.

**Quartermaster,** in military affairs, an officer who superintends the issue of stores, food, and clothing, and arranges transportation for a regiment when necessary. In nautical affairs, a petty officer, who, besides having charge of the stowage of ballast and provisions, coiling of ropes, etc., attends to the steering of the ship. He is appointed by the captain.

**Quartermaster-general,** in the United States a staff-officer with rank of Brigadier-General. He is chief officer in the quartermaster's department.

**Quartermaster-sergeant,** in the United States, one whose duty it is to assist the quartermaster.

**Quartet,** a piece of music arranged for four voices or instruments, in which all the parts are obligati; i. e., no one can be omitted without injuring the proper effect of the composition.

**Quartley, Arthur,** an American artist; born in Paris, May 24, 1839.

He came to the United States when a boy, and gained a reputation as a decorator, but it was not till after 1875 that he became known as an artist of merit. His first picture which brought him into notice was very large, showing a waste of water beating against a rock. It was exhibited at the Academy of Design, and belongs to Wellesley College. He had a fondness for wild marine and coast scenes. He was elected a National Academician in 1886, and died in New York, May 24 of that year.



QUASSIA: BITTERWOOD.  
a, Fruit.

**Quarto**, name of the size of a book in which a sheet makes four leaves. Frequently abbreviated to 4to. Also a book formed by folding a sheet twice, making four leaves, eight pages. The term, by modern usage, refers to a book of nearly square form. The proportions vary according to the size of the sheets.

**Quartz**, in mineralogy, a rhombohedral or hexagonal mineral, crystallizing mostly in hexagonal prisms with pyramidal terminations. Found also massive, and of varying texture. Quartz is abundantly distributed, is

an essential constituent of many rocks, notably granite, gneiss, various schists, and constitutes the larger part of mineral veins. Many of its varieties are largely employed in jewelry.

**Quass**, or **Quas**, a thin, sour, fermented liquor, made by pouring warm water on rye or barley meal, and drunk by the peasants of Russia.

**Quassia**, a tree cultivated in the West Indies and the parts adjacent. It has terminal clusters of large, red flowers, and unequally pinnate leaves. It comes to this country in logs or billets, and is retained as chips or raspings. It is given as an extract, an infusion, or a tincture. An infusion of it is used to poison flies.

**Quaternary**, or **Post-Tertiary**, the fourth great division of the fossiliferous strata, which embraces the Pleistocene or Glacial and Post-glacial and Recent systems.

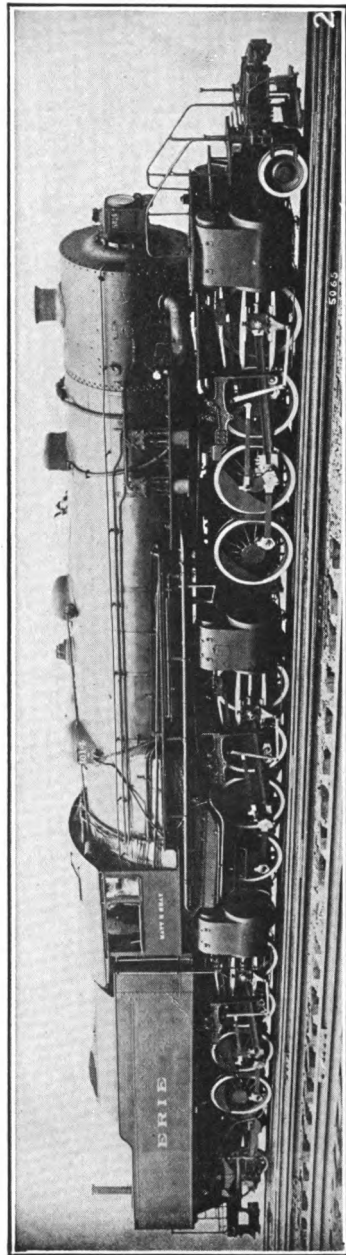
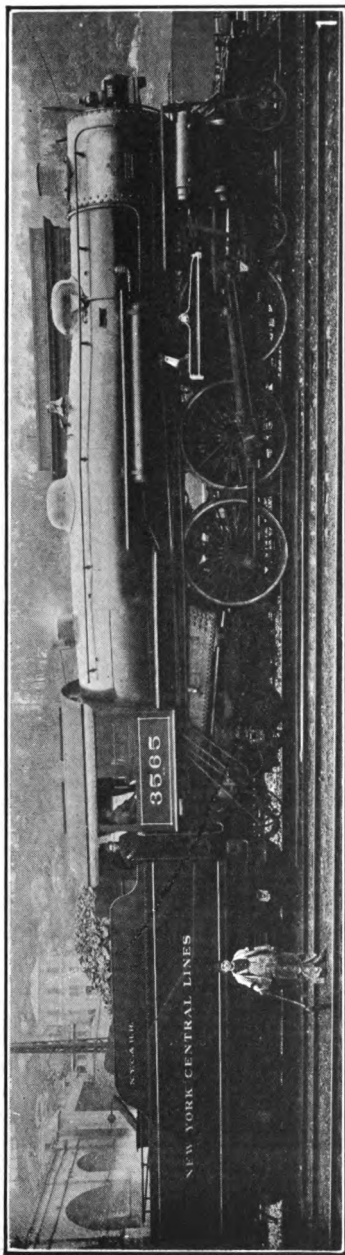
**Quatre-Bras**, a Belgian hamlet, 10 miles S. of Waterloo, 12 miles N. of Charleroi, 18 miles S. E. of Brussels; name derived from the meeting of four roads here. Though a small place it has large historical interest. It was here that the noted obstinate conflict between the French and the Allies occurred on June 16, 1815, resulting in the total defeat of the French and the narrow escape from capture of the Duke of Wellington. It was also conspicuous in the early German movements against Belgium in 1914-15.

**Quatrefoil**, in architecture, a piercing or panel divided by cusps or foliations into four leaves, or more correctly the leaf-shaped figure formed by the cusps. The name is also given to flowers and leaves of a similar form carved as ornaments on moldings, etc. It differs from the cinquefoil only in the number of cusps. In heraldry, four-leaved grass; a frequent bearing in coat-armour.

**Quay**, a landing place; a wharf projecting into a stream, harbor, or basin, to which vessels are moored.

**Quay, Matthew Stanley**, an American legislator; born in Dillsburg, Pa., Sept. 30, 1833; was graduated at Jefferson College in 1850, and admitted to the bar in 1854; entered the Union army in 1861 and won distinction; was promoted lieu-

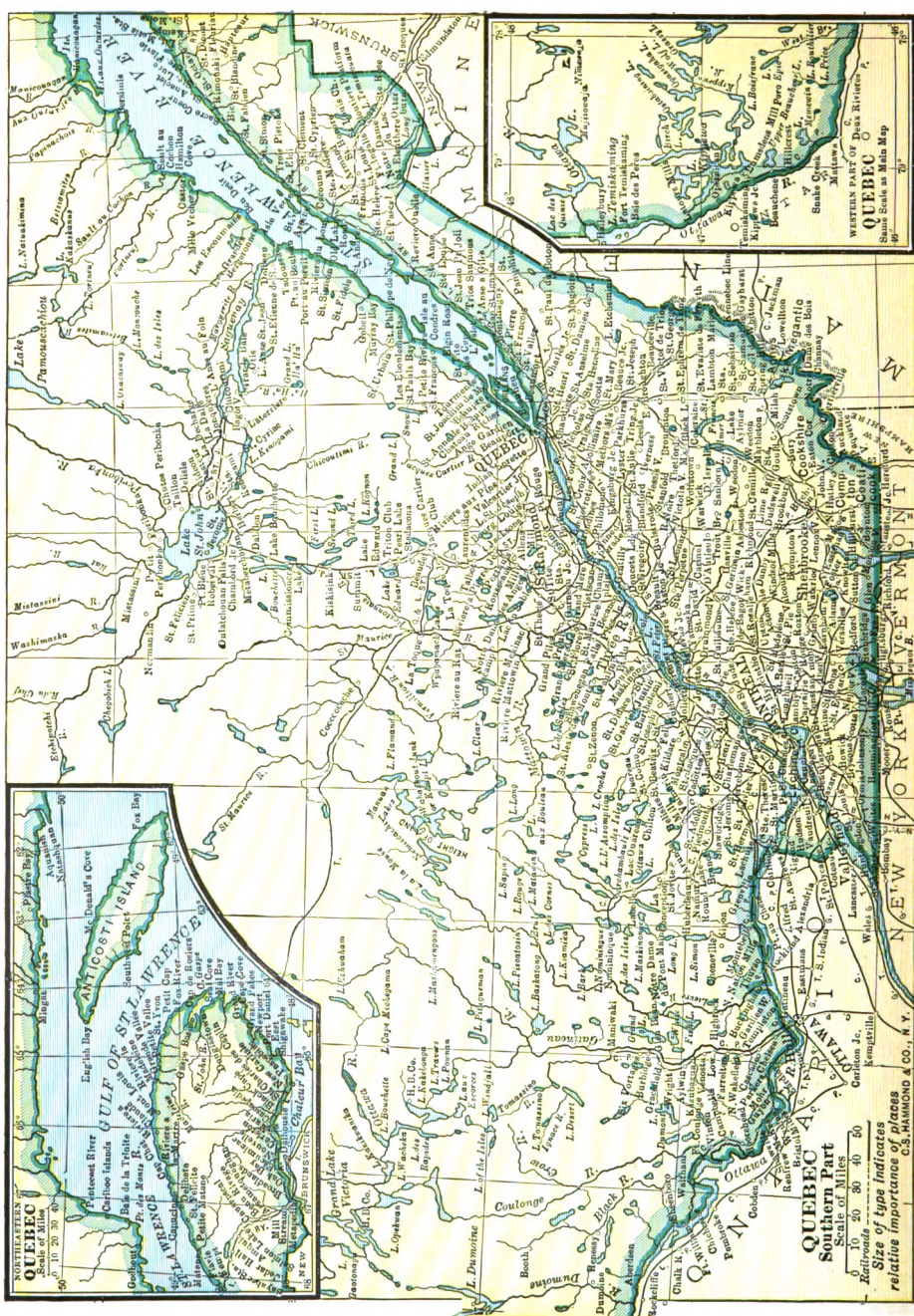
## MODERN PASSENGER AND FREIGHT LOCOMOTIVES



- 1—Latest type large and powerful passenger locomotive.  
 2—A giant freight locomotive—the largest in the world—105 ft. long, with power to haul a 5-mile train of 640 fifty-ton cars.

Photos by Brown Bros.





tenant-colonel and assistant commissary general; received a congressional medal of honor for exceptional service; became State treasurer of Pennsylvania in 1885; and was a United States Senator in 1887-1899. Early in the latter year he was placed on trial on charges of misappropriation of public funds, and on April 21 was acquitted. Governor Stone appointed him United States Senator ad interim on the same day, and in January, 1901, he was reelected to the United States Senate to fill out the vacant term caused by the failure of the Legislature to elect a Senator in January, 1899. He died May 28, 1904.

**Quebec**, a province of the Dominion of Canada, formerly called Canada East; bounded on the N. by Hudson Strait and Ungava Bay; on the E. by Labrador and the Gulf of St. Lawrence; on the S. by New Brunswick, Chaleurs Bay, Maine, New Hampshire, Vermont, and New York; on the S. W. and W. by the province of Ontario and Hudson Bay; gross area, 706,834 square miles; pop. (1929 Est.) 2,690,040; capital, Quebec. The surface of the province is varied, being diversified by mountains, rivers, lakes, and extensive forests. The chief river is the St. Lawrence, which flows through the entire length of the province. The climate is variable, though salubrious, the temperature ranging from 20° below zero in winter to 90° in summer.

In 1929, the production value of all mining products was \$46,358,285. Copper is mined in Brome and Megantic counties; gold in Beauce; iron ore in St. Maurice; and nickel in Pontiac. The other mineral productions include asbestos, apatite, plumbago, mica, slate-stone, etc.

The soil is generally fertile and is chiefly cultivated near the rivers.

Quebec's wealth also lies in her fisheries, forest products, dairying and industry. In 1929, fisher production amounted to \$3,000,000; forest products, \$19,148,129; dairying production (1,400 plants), \$83,000,000; industry counted (1928) 7,231 plants, employing 196,094 persons and producing goods valued at \$1,073,162,291.

Export trade in 1929-30 amounted to \$341,529,874 and imports, \$330,425,-

500. Quebec is famous as a tourist center, over 711,000 motor cars entering the province in 1930 and nearly \$65,000,000 was spent by tourists.

The affairs of the province are administered by a Lieutenant-Governor, appointed by the Governor-General of Canada, assisted by a responsible executive council. There are two Chambers, the Legislative Council, composed of 24 members who hold their appointments for life, and a Legislative Assembly, which has 81 members, elected by the people for five years. The city of Quebec was founded by Champlain in 1608, who later established trading stations and forts at various places. The French governed Quebec till 1759, when General Wolfe won the battles of the Plains of Abraham, and the English gained control. Prior to 1841, Quebec was called Lower Canada, but in that year it was united to Upper Canada. It became a province of the Dominion, 1867, and was enlarged by the annexation of Ungava in 1912.

**Quebec**, city and capital of Quebec county and of the Province of Quebec, Canada; on the St. Lawrence river and several trunk line railroads; 180 miles N. E. of Montreal; is an important sea and river port; cradle of Canadian history; is a port of entry, with an extensive commerce, especially in lumber; has large shipyards and many manufacturing; and is particularly rich in historical associations and features. The city has a picturesque site, on a high tableland, is in a highly productive farming section; and is a strongly-fortified military post. There are Anglican and Roman Catholic cathedrals, Laval University, the Church of Notre Dame des Victoires (1688), Champlain Market, large drill hall, Auditorium, Seminary of Quebec, Morrin College, Grey Nunnery, Canadian Institute, General and Jeffery Hale hospitals, and many charitable and benevolent institutions. Pop. (1930 Est.) 135,000.

**Queen**, a female who is chief or preëminent among others; one who presides; as, the queen of beauty, the queen of love, etc. In cards, a card on which a queen is depicted. In



chess, the most powerful and, after the king, the most important of all the pieces in a set of chessmen.

**Queen Anne's Bounty**, the name given to a fund appropriated to increase the income of the poorer clergy of England, created out of the first fruits and tenths.

**Queen Bee**, in entomology, a fully developed female bee in a hive or nest. She lays 2,000 or 3,000 eggs daily during the height of summer, or more than 1,000,000 during her lifetime, which is about five years. When a young queen comes forth, the old one becomes agitated with jealousy, and ultimately quits the hive, surrounded by a great multitude of workers, who found a new colony, leaving the old hive to the possession of the youthful rival. Two days to a week after coming to maturity, the young queen temporarily flies forth, and is fertilized in the air. See BEE.

**Queen Charlotte's Islands**, a group to the N. of Vancouver Island, off the coast of British Columbia; area, 5,100 square miles. The two principal islands, Graham and Moresby, have a length of 160 and a greatest breadth of nearly 70 miles. The climate is healthy, but very rainy. Anthracite coal, copper and iron ore, and gold bearing quartz have been found, and forests abound. The inhabitants are about 2,000 Indians, who engage in fishing. Queen Charlotte's Sound is a strait separating Vancouver Island on the N. from the mainland.

**Queen's College**, for women, was established in London, in 1848, and incorporated by royal charter in 1853. Its aim is to provide for the higher education of women, in the first place by a liberal school training, and subsequently by a six years' course of college education.

**Queensland**, an Australian State, comprising the whole N. E. portion of Australia N. of New South Wales and E. of South Australia and its Northern Territory, being elsewhere bounded by the Gulf of Carpentaria, Torres Strait, and the Pacific. A considerable portion is thus within the tropics, the extreme N. part forming a sort of peninsula, known as York Peninsula. It has an area of

about 670,500 square miles; pop. (1921) 757,634, and is divided into 12 large districts.

The first settlement of Queensland took place in 1825, when the territory was used as a place of transportation for convicts, who continued to be sent there till 1839. In 1842 the country was opened to free settlers. It was originally a part of New South Wales, and was organized as a separate colony in 1859. The government of the State is vested in a governor, who is the crown's representative, and a Parliament of two houses, the legislative council and the legislative assembly. The council consists of 39 members appointed by the crown for life, and the assembly of 72 members elected by the people for five years, and representing 72 electoral districts. The capital of the State is Brisbane. In January, 1896, a disastrous flood caused great loss of life and property in Brisbane and Northern Queensland.

**Queenstown**, a seaport of Ireland, in the harbor of Cork; 12 miles S. E. of Cork, 177 miles S. W. of Dublin. It has a mild and salubrious climate; is a noted bathing resort; has a noted Roman Catholic cathedral; and is an important port of call, British and American mail being handled here. (1926 Est.) 12,300.

**Quelpart**, an island 60 miles off the S. coast of Korea; about 40 miles long by 17 broad. It is rock-bound and mountainous, the volcanic Mount Auckland being 6,500 feet high. It has fertile soil and good timber, and is populous.

**Querétaro**, a city of Mexico; capital of the State of the same name; 6,273 feet above sea-level; 153 miles N. W. of Mexico City; has a noted aqueduct supported in part upon arches 90 feet high; contains a government palace, a cathedral, and cotton mills. It was here that Emperor Maximilian was executed on June 19, 1867. Pop. (1919) 37,400.

**Quesada, Gonzalo de**, a Cuban patriot and diplomatist; born in Havana, Cuba, Dec. 15, 1868; was graduated at the College of the City of New York in 1888; was secretary of the Cuban revolutionary party and associated with Jose Marti in the struggle for Cuban independence. In

1900 he was the special commissioner of Cuba to the United States, and also to the Paris Exposition; in 1901 was a member of the Cuban Constitutional Convention and in the same year was appointed a chevalier of the Legion of Honor of France. He published "Patriotism"; "History of Free Cuba"; etc. Subsequently he was Cuban Minister to the United States.

**Quesnay, Francois**, a French physician and economist; born near Paris, France, June 4, 1694. He was the founder of the school of economists called Physiocrats, and very influential on Adam Smith and all modern political economy. He published several medical works, in addition to his more famous ones on political economy. He died Dec. 16, 1774.

**Quezal**, a most beautiful Central American bird of the Trogon family. It is about the size of a magpie, and the male is adorned with tail feathers from 3 to 3½ feet in length, and of a gorgeous emerald color. The food of the quezal consists chiefly of fruits. It lives in forests of tall trees. There are several allied species of birds, but none with the distinctive feature of the quezal.

**Quichua**, the name of a native race of South America, inhabiting Peru, parts of Ecuador, Bolivia, etc. With the Aymaras the Quichuas composed the larger portion of the population of the empire of the Incas. The Quichua language, which was formerly the state language of the Incas, is still the chief speech of Peru, of a large portion of Bolivia, of the part of Ecuador bordering upon Peru, and of the N. section of the Argentine Republic. It is one of the most beautiful and at the same time comprehensive tongues of America.

**Quicklime**, lime in a caustic state; calcium oxide deprived by heat of its carbon dioxide and water. This is extensively done in lime kilns, the fuel used being fagots, brushwood, or coal. The firewood and lime to be calcined are mixed. Quicklime treated with water evolves much heat, and falls into a thick paste. Lime thus slaked and mixed with sand constitutes mortar.

**Quicksand**, in its usual significance, a tract of sand which, without

differing much in appearance from the shore of which it forms part, remains permanently saturated with water to such an extent that it cannot support any weight. Quicksands are most often found near the mouths of large rivers. Quicksands are not commonly of great extent, and their danger has probably been exaggerated in the popular mind by sensational descriptions in works of fiction. Persons sink in a quicksand exactly as in water, only more slowly; and it is probable that if the victim did not struggle he would not sink over the head, as experiments show that water containing a quantity of solid matter in suspension has its floating powers increased. The name quicksand is sometimes applied to the drifting sands which are carried by wind over cultivated land bordering the seashore or a desert.

**Quids**, a name given to the few supporters of John Randolph when he seceded from the Republican party in 1805. The Latin phrase tertium quid, a "third something" (as distinguished from the two powerful parties), gave rise to the name.

**Quietism**, the doctrine that the essence of true religion consists in the withdrawal of the soul from external and finite objects, and its quiet concentration upon God.

**Quileute**, a tribe of North American Indians, who formerly lived on a river of the same name, in the State of Washington. Their numbers were gradually reduced by wars with other tribes and the few remaining are found in the Neah Bay reservation in Washington.

**Quillaia**, or **Soap-bark**, the bark of a South American tree belonging to the wing-seeded section of the Rosaceæ. It is used to make a lather instead of soap in washing silks, woollens, etc. It is called also Quillaia-bark.

**Quince**, the fruit of *Cydonia vulgaris*, or the tree itself. It is 15 or 20 feet high, with white or pale-red flowers, and ultimately golden fruit. It is indigenous in the S. of Europe, the N. of Africa, the Himalayas, etc. The fruit is too austere to be eaten uncooked, but is used in the preparation of marmalade, jelly, and preserves. Its mucilaginous seeds are demulcent, and given by the natives

of India in diarrhoea, dysentery, sore throat, and fever. The Japan quince is a small tree about six feet high, with oval crenately serrated leaves, and fine red flowers.

**Quincy**, city and capital of Adams county, Ill.; on the Mississippi river and several railroads; 110 miles W. of Springfield; is the trade center of a large farming area, producing grains, fruits, and vegetables; has varied manufactures, with output (1910) valued at \$11,436,000; is the see of a Protestant Episcopal bishop; and contains St. Francis' Solanus College (R. C.), Chadwick College (M. E.), St. Mary's Institute (R. C.), Illinois State Soldiers' and Sailors' Home, and Blessing and St. Mary's hospitals. Pop. (1930) 39,241.

**Quincy**, a city in Norfolk county, Mass.; on Boston harbor and the New York, New Haven & Hartford railroad; 9 miles S. of Boston; is the seat of the famous Quincy granite quarries; is chiefly engaged in quarrying and monumental work; contains the Crane Public Library, Adams Academy, and Woodward Institute; and is noted as the birthplace of John Hancock and Presidents John Adams and John Quincy Adams. Pop. (1930) 71,983.

**Quincy, Josiah**, sometimes called Josiah Quincy, Jr., an American lawyer; born in Boston, Mass., Jan. 23, 1744. Though noted as a patriot, he joined with John Adams in defending the British soldiers in the Boston Massacre case; took part in the town meeting ordering the "Boston tea-party;" and in September, 1774, went to England in behalf of the colonists. He died April 26, 1775.

**Quincy, Josiah**, an American author and orator; born in Boston, Mass., Feb. 4, 1772, son of Josiah Quincy. He studied law, and entered Congress in 1805, where he distinguished himself as an orator. In 1813 he declined a reelection, and devoted his attention to scientific agriculture. In 1829-1845 he was president of Harvard College. He died July 1, 1864.

**Quinine**, the most important alkaloid of the true cinchona bark, first obtained by Gomez, of Lisbon, in 1811.

**Quinsy**, or **Quinancy**, inflammatory sore throat. There is swelling of one tonsil, or of both, attended with difficulty of breathing and swallowing, and febrile symptoms. Quinsy has, though rarely, proved fatal by producing suffocation.

**Quintilian**, **Quintilianus Marcus Fabius**, a Roman rhetorician; native of Spain. His great work is entitled, "On Oratory as an Art," and was written after his retirement, out during the reign of Domitian. It is the most complete course of rhetoric handed down from ancient times, and is distinguished for its elegance of style, as well as for sound judgment, cultivated taste, and various knowledge. The first complete copy of this work was discovered by Poggio, in the abbey of St. Gall, about 1419, and the first printed edition appeared at Rome, in 1470. Quintilian is supposed to have died about A. D. 120.

**Quirinal, The**, one of the seven hills of ancient Rome, and next to the Palatine and Capitoline, the oldest and most famous quarter of the city. The Quirinal is a name applied to the Italian government from the fact that the king of Italy resides in the palace of the Quirinal.

**Quirites**, a designation of the citizens of ancient Rome as in their civil capacity. The name of Quirites belonged to them in addition to that of Romani, the latter designation applying to them in their political and military capacity.

**Quit-claim**, a deed of release; an instrument by which some claim, right or title, real or supposed, to an estate, is relinquished to another without any covenant or warranty, express or implied.

**Quitman, John Anthony**, an American military officer; born in Rhinebeck, New York, Sept. 1, 1799. Removing to Mississippi in 1821, he ultimately became governor, which he obtained through a vacancy in 1836. He soon after withdrew from political life, and joined the Texans in their struggle for independence. In 1846, he was appointed Brigadier-General of the United States army in the war with Mexico, distinguishing himself at Monterey, Vera Cruz, and Cerro Gordo, after which latter engagement

## Quito

he was brevetted Major-General, and was voted a sword by Congress for gallantry. He participated in the attack on Chapultepec, and was foremost in the assault on the City of Mexico, which city he governed till order was established. In 1855 and 1857 he was elected to Congress by large majorities. He died in Natchez, Miss., July 17, 1858.

**Quito**, the capital of Ecuador, in a ravine on the east side of the volcano of Pichincha, 9,348 feet above the sea, a little to the south of the equator, and 150 miles by rail N. E. of Guayaquil. Its streets, with the exception of four which meet in the large central square, are narrow, uneven, badly paved, and extremely dirty. The more important public buildings are the cathedral, several other churches and convents; the town-house, court-house, president's palace, the university, the arch-Episcopal palace, orphan asylum, and hospital. The manufactures consist chiefly of woolen and cotton goods; the chief exports are hides and rubber. Quito was originally the capital of a native kingdom of the same name, but the modern town was founded by the Spaniards in 1534. It has repeatedly suffered from earthquakes and volcanic eruptions, notably in 1797, when 40,000 lives were lost. Pop. (1921) 80,700, largely consisting of half-breeds and Indians.

**Quit-rent**, in law, a small rent payable by the tenants of most manors, whereby the tenant goes quit and free from all other services.

**Quittah**, a town on the coast of W. Africa, in the British colony of the Gold Coast. Pop. 5,000.

## Quo Warranto

**Quoits**, a game played with a flat-tish ring of iron, generally from  $8\frac{1}{4}$  to  $9\frac{1}{2}$  inches in external diameter, and between 1 and 2 inches in breadth. It is convex on the upper side and slightly concave on the under side, so that the outer edge curves downwards, and is sharp enough to cut into soft ground. The game is played in the following manner:—Two pins, called hobs, are driven into the ground from 18 to 24 yards apart; and the players, who are divided into two sides, stand beside one hob, and in regular succession throw their quoits (of which each player has two) as near the other hob as they can, giving the quoit an upward and forward pitch with the hand and arm, and at same time communicating to it a whirling motion so as to make it cut into the ground. The side which has the quoit nearest the hob counts a point towards game, or if the quoit is thrown over the hob, it counts two.

**Quorra**, a name given to the lower portion of the Niger (q. v.).

**Quorum**, a term used in commissions, of which the origin is the Latin expression, "quorum unum A. B. esse volumus," "of whom we will that A. B. be one," signifying originally, certain individuals, without whom the others could not proceed in the business. In legislative and similar assemblies a quorum is such a number of members as is competent to transact business.

**Quo Warranto**, in law, a writ issuing against any person or corporation that usurps any office or franchise, to inquire by what authority he or it supports his or its claim, in order to determine the right.

# R



**R**, the 18th letter and the 14th consonant of the English language, is classed as a semi-vowel and a liquid. It is also called a trill. By the Romans *r* was called the "dog's letter," from its sound resembling the snarling of dogs. The three *R*'s, a humorous and familiar designation for the three elementary subjects of education: reading, writing, and arithmetic.

**Ra** (more properly *Re*), the name of the god of the sun among the ancient Egyptians. He is represented, like *Horus*, with the head of a hawk, and bearing the disk of the sun on his head.

**Rabbi**, in Jewish history and literature, *rabbi* is the noun *Rab* with the pronominal suffix, and in Biblical Hebrew = great man, distinguished for age, rank, office, or skill, where, however, it only occurs without the suffix. In ordinary language it is the designation of a minister of religion of the Jewish faith.

**Rabbinic Hebrew**, that form of Hebrew in which the Jewish scholars and theologians of the Middle Ages composed their works. Grammatically it differs but little from the ancient Hebrew, but in many cases new meanings are attached to Hebrew words already in use, in other cases new derivatives are formed from old Hebrew roots, and many words are borrowed from the Arabic. The rabbinical literature is rich and well repays study.

**Rabbit**, a well-known burrowing rodent, of the family *Leporidæ*, to which also belong the hares. The rabbit is smaller than the hare, with shorter ears and hind legs.

**Rabelais, Francois**, a distinguished French scholar, satirist and humorist; born about 1490; died 1553. First a monk, he afterwards studied and practiced medicine and law, but became better known by his prolific literary activity of which the satirico-social-political creations, "*Gargantua*," "*Pantagruel*," "*Panurge*," and "*Friar John*," are monuments to his fame.

**Raccoon**, or *Raccoon*, a handsome animal, about the size of a large cat, brown furry hair, tail bushy and ringed; body large and unwieldy, legs short, feet with strong fossorial claws. It is omnivorous and ranges over a large part of North America, where



RACCOON: *PROCYON LOTOR*.

it is hunted for its fur. The crab-eating raccoon of South America, ranging as far N. as Panama, differs chiefly from the former in the shortness of its fur, and consequent slender shape.

**Race**, a class of individuals sprung from a common stock; the descendants collectively of a common ancestor; a family, tribe, nation, or people belonging, or supposed to belong, to the same stock.

The human family, according to Blumenbach, comprises five distinct races of men, viz.: The Caucasian, or white race, inhabiting Southwestern



Asia, the greater part of Europe, and spread into other quarters of the world; the Ethiopian, black or negro race, originating in Africa; the Mongolian, or yellow race of Northern and Eastern Asia; the Malayan or brown race of the East Indies and Australasia; and the Indian or red race of the American continent.

**Race Knowledge**, a term used by Prof. Patton of Princeton University to designate the general knowledge of a subject, useful to the whole human race, as distinguished from the detailed and specialized knowledge required by experts and scientists.

**Race Suicide**, the avoidance of the duties of motherhood.

**Rachel**, the second daughter of Laban, the dearly beloved of Jacob, who, to obtain her, devoted seven years to the flocks and herds of her father. But, at the end of that period, he found in his veiled bride not Rachel but Leah, the elder sister, whom he did not love, and was obliged to labor during seven more years in order to gain her. She was the mother of Joseph and Benjamin.

**Rachel, Eliza Rachel Felix**, a French actress; born in Muraph, Switzerland, Feb. 28, 1820; was the daughter of a Hebrew pedlar; received the classic school of tragedy; gained her crowning triumph in 1843, in her representation of "Phedre." In 1855 she made a visit to the United States. She died Jan. 3, 1858.

**Racine**, city, port of entry, and capital of Racine county, Wis.; on Lake Michigan and the Chicago & Northwestern and other railroads; 25 miles S. of Milwaukee; has a large commerce in coal and lumber; manufactures farm implements, iron castings, lumber, woolen goods, machinery, wagons, shoes, and soap; and contains Racine College, Racine Academy, St. Catherine's Academy, Taylor Orphan Asylum, and St. Luke's Hospital. Pop. (1930) 67,542.

**Racine, Jean**, an eminent French dramatic poet; born in La Ferte Milon, France, Dec. 22, 1639; commenced his poetical career in 1660. In 1688 appeared his "Andromaque," which placed him far above all his contemporaries except Corneille. After a lapse of 12 years he wrote, by desire

of Louis XIV. and Madame de Maintenon, the sacred dramas of "Esther" and "Athalie," which were performed by the young ladies of the institution of St. Cyr. He died April 21, 1698.

**Rack**, an apparatus for the judicial torture of criminals or suspected persons. It consisted of a large, open, wooden frame, within which the offender was laid on his back on the floor, with his wrists and ankles fastened by cords to two rollers at the ends of the frame. These rollers were then drawn or moved in opposite directions till the body rose to a level with the frame, and the bones of the sufferer were forced from their sockets. The rack was formerly used in Europe in the cases of traitors or conspirators, and by the officers of Inquisition to force a recantation of heretical opinions.

**Rackets**, a game played in a prepared court, open or close, with a small, hard ball and a racket or bat like that used for playing tennis.

**Radcliffe College**, an educational non-sectarian institution in Cambridge, Mass., for women; founded 1879; had in 1916, 147 professors and instructors and 665 students.

**Radetzky, Joseph Wenceslaus, Count**, a famous Austrian soldier; born at Trebnitz, in Bohemia, in 1766. Commencing his career in a Hungarian regiment of horse in 1784, he fought in most of the campaigns in which Austria was engaged from that date up to the time of his death. His most signal services were in Italy, whither he was called by the commotions following the French revolution of 1830. The victory at Novara, Mar. 23, 1849, resulted in Austrian supremacy, and Radetzky, field-marshal since 1836, was appointed Governor-General of Lombardy and Venetia.

**Radford, William**, an American naval officer; born in Fincastle, Va., March 1, 1808; entered the navy in March, 1825; served in the war with Mexico, and conducted the party which in 1847 cut out the "Malokadel," a Mexican war vessel, at Mazatlan. When the Civil War broke out he was assigned to the "Cumberland"; was promoted captain in July, 1862, and commodore in April, 1863. During the assault on Fort Fisher, in December, 1864, he commanded the "New Iron-

sides" and the ironclad portion of Porter's fleet. Radford was promoted to rear-admiral in July, 1866, and was retired on March 1, 1870. He died in Washington, D. C., Jan. 8, 1890.

**Radiant**, in botany, diverging from a common center, like rays. In heraldry an epithet applied to any ordinary or charge, when it is represented edged with rays or beams; rayonnant; rayonnee. In astronomy, the point in the heavens from which a star shower seems to proceed. In geometry, a straight line proceeding from a given point or fixed pole, about which it is conceived to revolve.

**Radio, Telephony.** The science of transmitting speech, music or other forms of voices by means of the electro-magnetic disturbances of the "ether" known as wireless waves. The word Radio has within the past few years come into wide usage as applying to Radio telephony and particularly to Radio Broadcasting. As implied by the term Radio the transmission is accomplished by the radiation in all directions through space of the ether waves, electrical waves, carrying the message. The original inception of radio was the experiments conducted by Fessenden, in 1899, based upon theoretical work of J. C. Maxwell done in 1865. Much research work was done in the next fifteen years by Marconi, Poulsen, De Forest, Fessenden and many others. Beginning with 1915 Radio had been perfected to a stage where it became a commercial and practical achievement of science. New developments of the science are of almost daily accomplishments. The rapid growth and popularity of radio is manifest by the fact that in Oct., 1928, the estimated sales of radio apparatus at \$1,000,000 a day with 250,000 persons engaged in the industry and a radio audience of over 22,000,000 persons.

**Radium**, a metallic element obtained like uranium, from pitch-blende or uraninite, a pitchy, greenish-black, lead oxide of uranium, usually found with silver and lead ores. Radium is produced chiefly as a chloride or bromide, and was discovered by M. and Mme. Curie, and M. Bemont, in 1888. Its radioactivity or phosphorescent property of emitting rays capable of traversing bodies opaque to ordinary

light, and of affecting photographic plates, similar to the Roentgen rays (q. v.), is forty times that of uranium, and its discovery and peculiar characteristics have given rise to many interesting physical speculations. According to Prof. Rutherford, of Montreal University, radium is formed probably by the decomposition of uranium, and changes spontaneously into the gas helium, helium itself being the decomposition of radium, and subject to further decomposition, each change corresponding to the production of a new element. The preparation of radium is very costly, entailing the use of enormous quantities of pitchblende; one pound of radium is valued at \$3,000,000.

**Radom**, one of the best built provincial towns of Russian Poland, 55 miles S. of Warsaw, and midway between that city and the Austrian frontier. It occupied the site of what is now Old Radom in 1216, New Radom being founded in 1340 by Casimir the Great, King of Poland. The celebrated Jadwiga was elected Queen of Poland here in 1382. The old city was ruined by several disastrous fires and particularly by the Swedish war of 1701-7, and in 1815 it was annexed to Russia. The present city has iron and agricultural machine works and tanneries, and a population in 1921 of 61,599.

**Raff, Joachim**, a German composer; born in Lachen, on Lake Zurich, May 27, 1822. From 1850 to 1856 he lived near Liszt in Weimar, then taught music at Wiesbaden till 1877; and from that year till his death, June 24, 1882, he was director of the musical conservatory at Frankfurt-on-Main. He published more than 200 musical productions, including symphonies, overtures, concertos for violin, 'cello, and piano, operas, quartettes, a great variety of pieces for piano and violin, and for piano alone.

**Raffle**, formerly a game of dice; one with three dice in which he who threw all alike won the stakes. Now a chance or lottery in which some article is put up by the owner to be drawn or thrown for by several persons who subscribe a small sum each, he who draws or throws the winning

number to become possessor of the article. The money subscribed goes to the original owner of the article.

**Rafinesque, Constantine Samuel**, an American botanist; born in Galatz, Turkey, in 1784. He settled permanently in the United States in 1815, and was made Professor of Botany in Transylvania University, Lexington, Ky., in 1818. Later, after lecturing in various places, he removed to Philadelphia. His publications include "Ancient History, or Annals of Kentucky," "Medical Flora, etc., of the United States," etc. He died in Philadelphia, Pa., Sept. 18, 1842.

**Ragatz**, a town of Switzerland, canton of St. Gall, situated at the junction of the Tamina with the Rhine, 1,700 feet above the sea, and connected by railway with Zürich and Coire. It is much resorted to both for its beautiful scenery and its mineral waters. Pipes are laid from Pfäfers, a mountain village at an altitude of 2,696 feet,  $2\frac{1}{2}$  miles higher up, by which the water is brought down from the hot springs there to a spacious bathing establishment. The temperature of the water is  $97^{\circ}$ - $100^{\circ}$ , and it is impregnated with carbonate of lime, magnesia, and salt. The permanent population is only about 2,000, but there is a large number of visitors, for the accommodation of whom large hotels, restaurants, etc., have been provided. There is also a bathing establishment near the springs, erected in 1704.

**Rags**, though valueless for most purposes, are yet of great importance in the arts, particularly in paper making. Besides the rags collected in the United States, the article is imported in large quantities from various foreign countries. Woolen rags, not being available for paper, are much used for manure; but those of a loose texture, and not too much worn, are unraveled by means of machinery, and mixed up with good wool, to form what is known as "shoddy," with which cheap woolen goods are made; while the refuse is pulverized and dyed various colors, to form the flock used by paper stainers for their flock-papers.

**Ragusa** (*Slav.* DUBROVNIK), an Austrian city on the S. coast of Dal-

matia, on an arm of land jutting into the Adriatic Sea, beneath the towering Monte Sergio, opposite the Gulf of Manfredonia in Italy; 100 miles S. E. of Spalato. It is strongly fortified, the works rising from the water's edge, and a huge tower stands guard from a high hill. In the Middle Ages Ragusa was noted for its success as an arbitrator of disputes of other people, and its generally peaceful attitude made it a recognized mercantile power. It attained freedom in the overthrow of Hungary in 1526, and for two centuries it was a center of art and literature. In 1805 the French seized it; in 1808 Napoleon declared the Republic of Ragusa to be at an end; and in 1814 the Austrians annexed it.

**Rail**, the common name of a family of gallatorial birds comprehending the rails proper, the coots, water-hens, and crakes. They are characterized by possessing a long bill, which is more or less curved at the tip and compressed at the sides, by having the nostrils in a membranous groove, the wings of moderate length, the tail short, the legs and toes long and slender, the hind toe placed on a level with the others. Most of the members of the family are aquatic, or frequent marshes; but some, as the crakes, frequent dry situations. The Virginian rail of the United States is somewhat smaller than the water rail of Europe; and the great-breasted rail or freshwater marsh hen is about 20 inches long, and inhabits the marshes of the Southern States of the United States. The land rail, so named, is the corn crake.

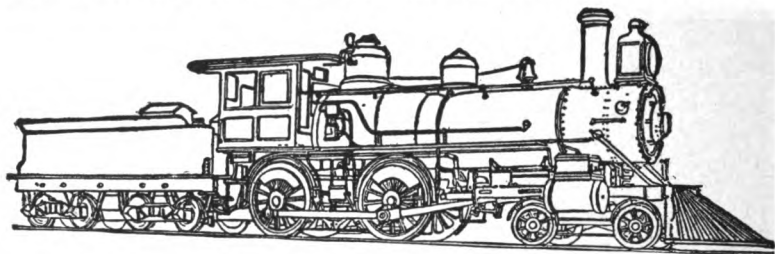
**Railroad** (the usual form in the United States), or **Railway** (the European form), a road or way provided with rails of iron or steel, on which the wheels of the cars run in order to lessen the friction. The "rails" were originally of timber, laid straight and parallel on transverse sleepers, and secured with pegs of wood, the sleepers being imbedded in the material of the roadway; the wheels had flanges on one side of the periphery to confine them to the track. The roadway was scantling, five by seven, pegged down to oak sleepers, four by eight, six feet long, and laid two and a half feet apart. The track for the

## Railroad

horses was filled in with ashes above the sleepers. Such roads were first laid near Newcastle, England, in 1602. About 1716 the wooden ways were capped with thin plates of malleable iron, having flanges along one side. Cast-iron bars were substituted in 1767. The modern railway consists of one or more series of iron or steel rails, laid parallel and continuously at a certain distance or width from each other, called the gauge. One pair of parallel rails constitutes a single track of railway, two pairs a double track, and so on. Railway development in the United States has had to adapt itself to the needs of a new and rapidly growing country, a large part of which was first made available for settlement by railways. Three locomotives were imported from England in 1829, and the first trial

## Railroad Systems

in 1852, 2,170 in 1853, 3,442 miles in 1854. The Civil War checked railway construction, only 3,257 miles being opened during the five years ending with 1865, when the aggregate amounted to 32,996 miles. Between 1865 and 1873, the mileage increased more than 100 per cent. including one road in operation and a second line in progress of construction to the Pacific coast. The greatest increase of this period was in the Western and Southwestern States, in which fully 25,000 miles of trackage were made ready for traffic. At the close of 1873 the total capital invested in railroads of the United States aggregated \$3,784,543,034, of which \$1,836,904,450 represented the bonded indebtedness. The depression which followed the panic of that year continued till 1879. In the latter year the construction again



MODERN AMERICAN LOCOMOTIVE.

in America took place Aug. 8, 1829, at Honesdale, Pa. The first railway constructed to be worked by locomotives was the South Carolina railroad (1826-1830), though trials of an experimental locomotive had been made before on the Baltimore and Ohio railroad, which continued to be worked by horsepower till 1832. The mileage of railway construction about kept pace with that of Great Britain till 1850; at the beginning of 1885 it amounted to 125,379 miles. The mileage completed amounted to 40 miles at the end of 1830, to 3,361 miles in 1841, and to 5,206 miles in 1847, of which 1,350 miles had been opened within six years. Then there was a sudden and great increase, the yearly additions for seven years being 1,056 miles in 1848, 1,048 in 1849, 1,261 in 1850, 1,274 in 1851, 2,288 in

increased 100 per cent., and between 1874 and 1888 there were built 85,814 miles of new railroad.

On May 31, 1924, the Interstate Commerce Commission reported for the previous fiscal year a total mileage of all steam railroads in operation of 234,305.44; total capital, \$22,290,101.185; total stock outstanding, \$9,140,960,901; and total funded debt, \$13,149,136,284. See ELECTRIC TRACTION.

**Railroad Systems.** The process of absorption of smaller concerns by large corporations is fully as marked among the railroads as it is among the great manufacturing industries. The growth in mileage of the largest roads is truly phenomenal, and the United States alone in North America with 391,141.51 miles of railroads in 1915, surpassed in total mileage, that of

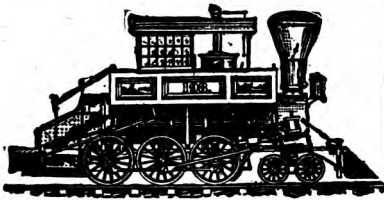
all the systems of Europe, which in 1913 was reported as 215,140 miles.

The largest aggregation controlled by any one company was that of the Chicago, Milwaukee and St. Paul which totaled 11,192 miles in 1926, the Pennsylvania Railroad making a close second with 10,517 miles, and the Atchinson, Topeka and Santa Fe third with 9,281 miles. The Great Northern, the Chicago and Northwestern, and the Southern Pacific all had over 8,000 miles of roads each. The Southern Pacific Company had 11,000 miles and the Chicago, Milwaukee and St. Paul had 10,391 miles.

The total railroad mileage of the United States in 1926 was 250,156, Texas leading with 16,134 miles, Illinois second with 12,037, and Pennsylvania third with 11,385.

In 1924 there were 69,484 steam locomotives, 372 electric locomotives, 2,411,627 freight cars and 57,451 passenger cars.

There was a total of 46,750 miles of electric railroads in the United States in 1925.



EARLY LOCOMOTIVE.

**Raimondi, Marcantonio**, an Italian engraver; born in Bologna, Italy, late in the 15th century. He copied on copper two sets of plates from Albrecht Durer's designs for the "Life of the Virgin" and the "Passion of Christ." At Rome, where he worked from 1510, he was chiefly engaged in engraving Raphael's works. On account of the power of his drawing and the purity of his expression, he is accounted the best among the engravers of the great painter. The capture of Rome by the Constable Bourbon in 1527 drove Marcantonio

back to Bologna, where he probably remained till he died, some time before 1534.

**Rain**, in meteorology, the fall of water in drops from the clouds, or the drops which fall. A cloud consists of aqueous vapor, the individual vesicles of which are very small. When by the constant condensation of fresh aqueous vapor these vesicles become large and heavy, and several of them unite, they are unable to resist the action of gravity and fall as rain.

**Rainbow**. The rainbow is the best known of all optical meteorological phenomena, consisting of a colored arch formed opposite the sun on falling raindrops, and visible whenever the necessary conditions of a passing shower on one side and a clear and not too high sun on the other occur. Two bows are frequently seen, each exhibiting the full spectrum of colors from red to violet; but in the inner or primary bow the red is the outer edge and violet the inner, while in the outer or secondary bow the order is reversed; the red being inside and the violet on the exterior. The colors are always arranged in a definite order, that of the solar spectrum—viz., red, orange, yellow, green, blue, indigo, and violet, but shade imperceptibly into each other.

**Rain Gauge**, an instrument or contrivance for measuring the amount of rain which falls on a given surface.

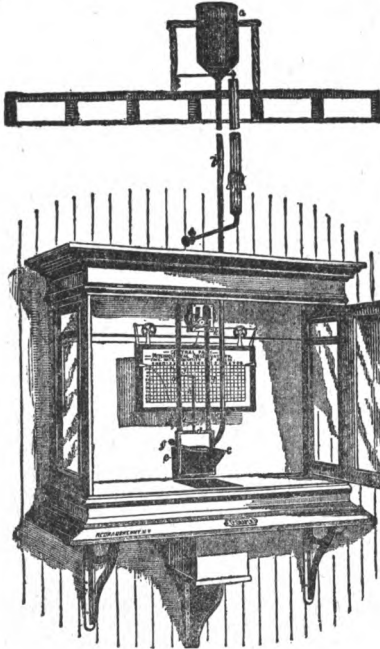
**Rainier, Mount**, a mountain of volcanic origin, the highest in the State of Washington, 14,363 feet high. It is a part of the coast range near Puget Sound, E. of Tacoma, and is sometimes called by the name of the city. The first ascent was made in 1870.

**Rain Making**. Various attempts have been made in sections of many countries subject to long periods of drought to produce artificial rain, or more properly to force the fall of rain out of its due season. The great majority of experiments have been conducted on the theory of concussion from explosions. In 1891, the Congress of the United States made an appropriation for a series of experiments in Texas, with the view of ascertaining whether means could be provided for relieving the arid territory of the Western and Southwestern States. The experi-



## Rainsford

ments were conducted by General Dryenforth for the Department of Agriculture, and were watched with much interest by both scientists and agriculturists. Scientists generally pronounced the experiment a failure.



RAIN GAUGES.

**Rainsford, William Stephen**, an American clergyman; born in Dublin, Ireland, Oct. 30, 1850; was graduated at St. John's College, England; made missionary tours in the United States and Canada; was assistant rector of St. James Cathedral, in Toronto, and rector of St. George's Church, New York city, in 1883-1905. Dr. Rainsford became widely known by his earnest advocacy of what has become popularly known as the "institutional church." He has done much to supply wholesome recreation for the young of both sexes in the

## Raleigh

parish of his church. After twenty-three years' service, ill-health compelled him to resign Jan. 7, 1906.

**Rain Tree**, a leguminous tree of tropical America, now largely planted in India for the shade it furnishes, and because it flourishes in barren salt-impregnated soils.

**Rainy Lake**, a sheet of water forming a portion of the boundary line between Ontario and the United States, W. of, and 100 miles distant from the nearest point, of Lake Superior, and about 50 miles long.

**Raisins**, grapes dried in the sun. Inferior qualities are dried in an oven. Raisins are extensively produced in California. They are slightly refrigerant. In the United States they are used to sweeten preparations, in India they are given as a medicine.

**Rajah**, originally, a title which belonged to princes of Hindu race who, either as independent sovereigns or as feudatories, governed a territory.

**Rakoczy March**, a simple but grand military air by an unknown composer, dating from the end of the 17th century, said to have been the favorite march of Francis Rakoczy II. of Transylvania. The Hungarians adopted it as their national march, and in 1848 it is alleged to have had the same inspiring effect on the revolutionary troops of Hungary as the "Marseillaise" had on the French.

**Rale**, or **Rasle**, **Sébastien**, a Jesuit missionary in North America; born in 1657; shot in 1724. He is remembered by his dictionary of the Abenaki language, and by his connection with Dummer's War (q. v.).

**Raleigh**, a city, capital of the State of North Carolina, and county-seat of Wake Co.; on the Southern and Seaboard Air Line; 28 miles S. E. of Durham. Here are the State Capitol, United States Government Building, State Penitentiary, State Institution for the Deaf and Dumb and the Blind, etc. Pop. (1930) 37,379.

**Raleigh, Sir Walter**, an English soldier, colonist, and philosopher; born in Budleigh, Devonshire, England, in 1552. He entered into the troop of gentlemen volunteers who went to the assistance of the Protestants in France, where he continued about five or six years. He subsequently joined

the expedition of General Norris to the Netherlands, in aid of the cause of the Prince of Orange. Soon after his return he engaged with his half-brother, Sir Humphrey Gilbert, in a voyage to America, whence they returned in 1579. On his return to England he introduced himself to the notice of Queen Elizabeth by a romantic piece of gallantry. Her majesty, while taking a walk, stopped at a muddy place, hesitating whether to proceed or not; on which Raleigh took off his new plush cloak and spread it on the ground. The queen trod gently over the foot-cloth, and soon rewarded the sacrifice of a cloak with a handsome suit to the owner. Having obtained from Elizabeth an ample patent over an extensive region, he sent forth two ships, under Captains Amadas and Barlow, which reached the shores of North Carolina in July, 1584, and proceeded N. to Virginia. The name last mentioned was given to the new country in honor of the "Virgin Queen." Raleigh's patent was confirmed by Act of Parliament. He was elected along with Sir William Courtenay, for his native shire.

A joint-stock company was formed by Sanderson, a merchant of London, Raleigh and Sir Adrian Gilbert, another of his half-brothers, to find the Northwest Passage. The voyages of Davis to the Arctic Seas were made under their auspices. But Raleigh and his partners sent a fleet to Virginia, under his relative, Sir Richard Grenville. A party of intending colonists, with Ralph Lane at their head, were landed at Roanoke. Raleigh himself never visited his settlement in Virginia, but he sent thither, in 1587, a fresh party of settlers, who founded the city of Raleigh, now capital of North Carolina.

In the defeat of the Spanish Armada, in 1588, Sir Walter bore a glorious part. In 1591 he sailed on an expedition against the Spanish fleet. About the same time he incurred the queen's displeasure by an intrigue with one of her maids of honor, whom he afterward married. In 1595 he sailed to Guiana, and destroyed the capital of Trinidad. The year following he took a distinguished part in the taking of Cadiz. In the succeeding reign, his fortunes changed. He was

stripped of his preferments, tried, and condemned for high treason, without the least evidence. He remained in the Tower of London 13 years, during which time he wrote several works. His release in 1615, was occasioned because of the flattering account he had given of some rich mines in Guiana. On gaining his liberty, he sailed to that country where he burned the Spanish town of St. Thomas, and returned to England. In consequence of a complaint of the Spanish ambassador, he was apprehended, and, in a most unprecedented manner, beheaded, on his former sentence. He died in London, England, Oct. 29, 1617.

**Ralph, Julian**, journalist; born in New York, May 27, 1853; died 1903. He was connected with the New York "Sun," the New York "Journal," and London "Daily Mail."

**Ram**, in machinery, the weight of a pile or post driver. In nautical language: (1) A beak of iron or steel at the bow of a war-vessel. (2) A steam ironclad, armed at the bow below the water-line with such a beak.

**Ramadan**, the ninth month in the Mohammedan year. In it Mohammed received his first revelation, and every believer is therefore enjoined to keep a strict fast throughout its entire course, from the dawn to sunset. During the night, however, the most necessary wants may be satisfied—a permission which, practically, is interpreted by a profuse indulgence in all sorts of enjoyments.

**Ramayana**, the name of one of the two great epic poems of ancient India.

**Rameses**, or **Ramses**, the name of several Egyptian monarchs, some of whom were known to the Greek and Roman writers and the chronologists; the name signifies "born of the sun," or the "nascent sun." The exploits of Rameses are confounded by the Greek and Roman authors with those of Sesostris, and mingled in the legend of Aramais, the Danaus of the Greeks. He is the supposed Sesostris of most authors, and his sarcophagus and mummy were found in Egypt in 1890. Rameses III. was the chief of the 20th dynasty. He founded the magnificent pile of edifices of Medinat Habu, embellished Luxor, Gurnah, and other

parts of Egypt. In 1889 the sarcophagus and mummies of himself and his queen were discovered in Egypt in a marvelous state of preservation. **Rameses IV.** reigned a short time and performed no distinguished actions. **Rameses V.**, of whom inscriptions are found in Silsilis. **Rameses VI.**, whose tomb at the Biban-El-Meluk contains some astronomical records, from which the date of his reign has been calculated at 1240 B. C. **Rameses VII.**, **VIII.**, **IX.**, **X.**, and **XI.**, undistinguished monarchs. **Rameses XII.**, who reigned above 33 years. **Rameses XIII.** was an important monarch. **Rameses** is also the name of one of the fortresses or treasure cities built by the Hebrews during their residence in Egypt.

**Ramil**, a plant producing what is popularly known as China grass. China has been making ramil fabrics since the time of Confucius, and the ancient Romans wore robes woven of its silky floss. The plant does well in the S. part of the United States and a finer fiber can be grown there than in the tropics. In such a climate the fiber is long, silky and brilliant, and textiles made from it are stronger than linen and have the luster of silk.

**Ramirez, Ignacio**, a Mexican philosopher; born in San Miguel el Grande, June 23, 1818. He was of pure Aztec blood. He died in Mexico, June 15, 1879.

**Rampart**, in fortification, an elevation or mound of earth round a place, capable of resisting cannon shot, and on which the parapet is raised.

**Rampolla, Mariano del Tindaro**, an Italian clergyman; born in Polizzi, Sicily, Aug. 17, 1843. On the decease of Cardinal Jacobini, the Papal Secretary of State, in 1887, Pope Leo XIII. created Rampolla a cardinal and also appointed him Papal Secretary of State. His principal object was a political alliance with France. The Dreyfus affair, having given to the French policy a different turn, destroyed entirely the plan he had so laboriously set to work. Rampolla was several times considered a prominent candidate for the papal office, but sacrificed his prospects by resigning in 1903.

**Ramsay, Allan**, a Scotch poet; born in Leadhills, Lanarkshire, Scot-

land, Oct. 15, 1686. His fame reached its acme on the production of "The Gentle Shepherd." He died in Edinburgh, Jan. 7, 1758.

**Ramsay, David**, an American physician and historian; born in Lancaster Co., Pa., April 2, 1749; died in Charleston, S. C., May 8, 1815.

**Ramsay, Francis Munroe**, an American naval officer; born in Washington, D. C., April 5, 1835; appointed a midshipman, Oct. 5, 1850; served through the Civil War with much credit; became a rear-admiral in 1894; and was retired April 5, 1897, after having held several important appointments. He died July 19, 1914.

**Ramsay, Sir William**, a distinguished scientist; born in Glasgow, Scotland, Oct. 2, 1852. He graduated from the universities in Glasgow and Tübingen, and after college appointments in Glasgow and Bristol, became professor of chemistry at University College, London. With Lord Rayleigh, he discovered Argon, and his discoveries of helium, its disintegration from radium (q. v.), also of the atmospheric gases neon, krypton, and xenon, and his numerous scientific publications, have placed him in the foremost rank of chemists. Knighted in 1902, and is an honorary member of the principal scientific institutions. Died, 1916.

**Ramsden, Jesse**, an English mathematical instrument-maker; born in Salterhebble, near Halifax, Yorkshire, England in 1735. About 1755 he moved to London, where his skill as an engraver, recommended him to the mathematical instrument-makers. He so improved the sextant that its range of error was diminished from 5 minutes to 30 seconds. He died in Brighton, England, Nov. 5, 1800.

**Ramsey, Alexander**, an American statesman; born near Harrisburg, Pa., Sept. 8, 1815. He studied law and began practice at Harrisburg in 1839. After filling several public offices he was a member of Congress in 1843-1847; appointed governor of the Territory of Minnesota in 1849 and 1859; Secretary of War in 1879. A member of the Utah Commission in 1881. Died 1903.

**Ramsey, Marathon Montrose**, an American educator; born in Newton, Mass., in 1867; was graduated at

Columbia University in 1894. He was the principal translator for the International American Conference in 1889-1890, and served as a special clerk for the collection and classification of information on foreign military subjects in 1890-1894. In the latter year he accepted the chair of Romance Languages at Columbia University. He was director of the Columbian Summer School in 1898-1900.

**Ranavalona III.**, a former Queen of Madagascar; born in 1861. She succeeded Queen Ranavalona II. in 1883, having been nominated by her as the future queen. She married the prime minister, Rainilaiarivony (deposed in 1895 and deceased in 1896) soon after ascending the throne. She was crowned in November, 1883. Her kingdom and capital were taken by the French in 1895, and the country was made a French colony. She is not permitted to live in Madagascar, having been exiled to Réunion in 1897.

**Rance, Armand Jean le Bouthillier de**, the founder of the reformed order of La Trappe; born in Paris, France, Jan. 9, 1626. Residing at Paris, he gave himself up to a life of dissipation. In 1657, however, a marked change took place in his character. He demitted all his benefices except the priory of Boulogne and the abbey of La Trappe. Retiring to the latter place in 1664, he began those reforms which have rendered his name famous. He died in Soligny-la-Trappe, Orne, France, Oct. 12, 1706.

**Ranching**, the business of cattle-breeding as pursued on a large scale in the unsettled districts of the United States from the Mississippi to the Pacific coasts, and from the Bad Lands of the Upper Missouri to the Gulf of Mexico. The name is derived from the Spanish rancho, properly "mess" or "mess room," but used in Mexico also for a herdsman's hut, and finally for a grazing farm.

**Rand, Edward Augustus**, an Episcopal clergyman and writer of juvenile books; born in Portsmouth, N. H., April 5, 1837; was graduated at Bangor Theological Seminary, and entered the Episcopal ministry. He wrote "Pushing Ahead"; "Two College Boys"; etc. Died Oct. 5, 1903.

**Rand, The, or White Waters Range**, a small tract of land, extending 25 miles either side of Johannesburg, South Africa, and famous for its mineral wealth. The reefs are accessible and rather easily worked. The deposits are unique in their unparalleled persistence of ore, which is interspersed in the quartz and sandstone. It is not of very high quality, yielding about \$10 per ton. Prior to the Boer War the Rand was yielding gold at the rate of \$100,000,000 annually, or about one-third of the world's production. Since the war the output has been gradually rising, and in 1915 it exceeded its former average with a total of \$170,276,770.

**Randall, Alexander Williams**, an American statesman; born in Ames, N. Y., Oct. 31, 1819; was admitted to the bar and began practice in Waukesha, Wis., in 1840; became postmaster there, and in 1847 was elected to the convention that framed the State constitution. He was elected to the State Assembly in 1855; governor of Wisconsin in 1857 and in 1859, and was appointed United States Minister to Italy in 1861. On his return he was made assistant postmaster-general. He died in Elmira, N. Y., July 25, 1872.

**Randall, Emilius Oviatt**, an American author; born in Richfield, O., Oct. 28, 1850; was graduated at Cornell University in 1874; was admitted to the bar in 1890 and accepted the chair of law at the Ohio State University in 1893; became secretary of the Ohio State Archaeological and Historical Society in 1894, and official reporter of the Ohio Supreme Court in 1895.

**Randall, George M.**, an American military officer; born in Ohio, Oct. 8, 1841. He was graduated at the United States Military Academy, and commissioned 2d lieutenant in the 4th Infantry in 1861; served through the Civil War. In the war with Spain he was commissioned a Brigadier-General of volunteers, May 4, 1898; was honorably discharged under this commission on April 12, 1898; was reappointed Brigadier-General, Jan. 20, 1900; promoted Brigadier-General, U. S. A., Feb. 6, 1901, and Major-General, June 19, 1905, and was retired, Oct. 8, 1905.

**Randall, James Ryder**, an American journalist and composer; born in Baltimore, Md., Jan. 1, 1839; was educated at Georgetown College, D. C. He gave powerful aid to the Southern cause by his lyrics. These include, besides "Maryland, My Maryland," "Stonewall Jackson"; "There's Life in the Old Land Yet"; etc. After 1866 he lived in Augusta, Ga. Died Jan. 15, 1908.

**Randall, Samuel Jackson**, an American statesman; born in Philadelphia, Pa., Oct. 10, 1828. In 1862 he was elected to Congress, serving continuously till his death. He was Speaker of the House, 1876-1881. Died in Washington, D. C., April 12, 1890.

**Randolph, Alfred Magill**, an American clergyman; born in Winchester, Va., Aug. 31, 1836; was graduated at William and Mary College in 1855 and at the Virginia Theological Seminary in 1858; was ordained in the Protestant Episcopal Church. He was a chaplain in the Confederate army in 1863-65; pastor of Emmanuel Church, Baltimore, Md., in 1867-83; elected assistant bishop of Virginia in 1883, and bishop of Southern Virginia, in 1892.

**Randolph, Edmund Jennings**, an American statesman; born in Williamsburg, Va., Aug. 10, 1753; studied at William and Mary College, and was admitted to the bar. In 1776 he helped to frame the constitution of Virginia, and became the State's first attorney-general. In 1786-1788 he was governor of Virginia, and in 1787 a member of the convention which framed the Constitution of the United States. In 1789 he was appointed by Washington Attorney-General of the United States. In 1794 he was made Secretary of State. Died in Clarke co., Va., Sept. 13, 1813.

**Randolph, John**, "of Roanoke," an American statesman; born in Cawsons, Chesterfield co., Va., June 2, 1773. He claimed descent from Pocahontas, the Indian princess. He was educated for the legal profession, which, however, he never followed, devoting his attention to politics. In 1799, he was elected to Congress. His opposition to the War of 1812 caused his defeat in the following election; but he was reelected to Congress in 1814, where he remained for several

years. From 1825 to 1827 he was a United States Senator. In 1829 he was a member of the convention for revising the constitution of Virginia, and the year following was appointed United States minister to Russia. On his return, he was again elected to Congress, but was unable to occupy his seat. He was preeminent for his poetic eloquence, his absolute honesty, and the scathing wit, with which he exposed every corrupt scheme. He died in Philadelphia, Pa., on June 24, 1833.

**Randolph-Macon College**, an educational institution in Ashland, Va.; founded in 1830, under the auspices of the Methodist Episcopal Church, South.

**Range**, in gunnery, the horizontal distance to which a shot or other projectile is carried. When a cannon lies horizontally it is called the point-blank range; when the muzzle is elevated to 45 degrees it is called the utmost range. To this may be added the ricochet, the skipping or bounding shot, with the piece elevated from three to six degrees.

**Rangoon**, the capital of Lower Burma, and the chief seaport of Burma, at the junction of the Pegu, Hlaing or Rangoon, and Pu-zundoung rivers; about 21 miles from the sea. Since its occupancy by the British in 1852 Rangoon has undergone such changes that it is practically a new town, and its population has increased five-fold. The principal streets are broad, and contain many large and handsome buildings; there is a government dockyard, and steam cars have been introduced. Pop. (1921) 341,962.

**Ranjit Singh**. See RUNJEET SINGH.

**Rank**, in the army and navy, a grade of various officers established by law, each one carrying distinct rights, privileges, and emoluments.

**Ranke, Leopold von**, a German historian; born in Wiehe, between Gotha and Halle, Dec. 21, 1795. The works, "A History of the Roman and German People from 1494 to 1535," and "A Criticism on Modern Historians," procured him a call to Berlin as Professor of History in 1825. In 1827 he was sent by the Prussian government to consult the archives of Vienna, Venice, Rome, and Florence;



four years he spent in this work, and returned with a mass of the most valuable historical materials. The results of his labors were seen in "The Princes and Peoples of Southern Europe in the 16th and 17th Centuries," and other books dealing with Servia, Turkey, and Venice; and "The Roman Popes in the 16th and 17th Centuries," one of his great masterpieces of historical writing. Then he turned his attention to Central and Northern Europe. He began his "Universal History" when he was an old man of 82; he kept two schooled historical assistants busy, studied critically the Greek and other sources, dictated and worked 8 to 10 hours a day, and published one volume a year regularly, till he died, May 23, 1886. Ranke married an Irish lady in 1843, and was ennobled in 1865.

**Rankin, Jeremiah Eames**, an American clergyman and writer; born in Thornton, N. H., Jan. 2, 1828; was graduated at Middlebury College, Vt., in 1848; became president of Howard University in 1889. He wrote several hymns, including "For God and Home and Native land." He died in 1904.

**Ranney, William**, an American artist; born in Middletown, Conn., May 9, 1813; learned drawing in Brooklyn, N. Y. At the outbreak of the war between Texas and Mexico he enlisted with the Texans. He died in West Hoboken, N. J., Nov. 18, 1857.

**Ransom, Thomas Edward Greenfield**, an American military officer; born in Norwich, Vt., Nov. 29, 1834. Before the Civil War he was an engineer in Illinois; became a lieutenant-colonel of volunteers in July, 1861; was promoted Brigadier-General in January, 1863; joined Sherman's army and took command of a division just before the capture of Atlanta, Sept. 2, 1864. He died in Rome, Ga., Oct. 29, 1864.

**Ranunculus**, buttercup, crowfoot; the typical genus of the order Ranunculaceæ. Known species about 160, from temperate regions. Many have much divided leaves.

**Rape**, in law, carnal knowledge of a woman by force against her will.

**Rape**, a plant of the cabbage tribe, cultivated for its seeds, from which oil is extracted. The oil cake made from

rape seed is also used as food for sheep and cattle, and as a fertilizer.

**Raphael, Raffaello Sanzio**, or **Santi d'Urbino**, the greatest of modern painters; born in Urbino, Italy, March 28, 1483. He received his earliest instructions from his father, Giovanni Santi, after whose death, in 1494, he became the pupil of Perugino. In 1504 he visited Florence, and lived there till 1508, when he was called to Rome by Pope Julius II., and employed to paint the chambers of the Vatican. Raphael spent the rest



RANUNCULUS.

of his short life at Rome. In the numerous works, frescoes, and oil paintings of this unrivaled master, three styles are distinctly recognizable. The first is the "Peruginesque," the second "Florentine," and the third style "Roman," and is peculiarly Raphael's own—that which constitutes him the greatest of painters. Its supreme excellence is the equable development of all the essential qualities of art, composition, expression, design, coloring. Among Raphael's oil paintings are the "St. Cecilia," at Bologna; the famous "Madonna di San Sisto," now in the Dresden gallery; the "Spasimo di Sicilia," now at Madrid; and the "Transfiguration," his last work. It is now in the Vatican.

His drawings are very numerous, and are to be found in most of the public and private museums of America and Europe. Raphael, who had occupied himself with architecture as well as painting, was charged, on the death of his friend Bramante, in 1514, with the direction of the building of St. Peter's. Raphael died in Rome from the effects of a cold, and after an illness of a fortnight, on his 37th birthday, April 6, 1520.

**Rapier**, a light, highly-tempered, edgeless, and finely-pointed weapon of the sword kind used for thrusting. It is about three feet in length.

**Rapp, George**, a German-American socialist, founder of the sect of Economites; born in Wurtemberg, in 1770. After an attempt to restore the Church of New Testament days in Germany, he emigrated with his followers to Western Pennsylvania in 1803. There he established a settlement which he named Harmony. In 1815 the community removed to Indiana, and founded New Harmony; but this was sold in 1824 to Robert Owen, and Rapp and his followers returned to Pennsylvania, where they built Economy. As the years passed the community became wealthy. Its numbers have not increased, and in 1890 did not exceed 70. He died in Economy, Pa., Aug. 17, 1847.

**Rapp, Jean, Count**, a French military officer; born in Colmar, Haut-Rhin, France, April 27, 1772. He was intended for the Church, but his taste for a military life led him to enroll himself (1788) in the French army. He became aide-de-camp to Napoleon. Captured by the Russians at Danzig, he was sent as prisoner to Russia, and he did not return to France till July, 1814, where he was well received by Louis XVIII.; but in 1815 he went over to his old master, and was appointed Commander-in-Chief of the army of the Rhine. After Waterloo, Rapp again submitted to Louis. He died in Paris, Nov. 8, 1821.

**Rappahannock**, a river of Virginia, rising in the Blue Ridge of the Alleghany Mountains, receiving the Rapidan, and flowing about 125 miles S. E. to Chesapeake Bay. It is tidal and navigable to Fredericksburg. The Rappahannock and the Rapidan were the scenes of some of the most san-

guinary battles of the Civil War, at Fredericksburg, Chancellorsville, and the Wilderness.

**Rarefaction**, in physics, the act of rendering more rare, i. e., less dense. Used specially of the diminution in the density of the air in the receiver of an air pump, or at great altitudes.

**Rarey, John S.**, an American horse tamer; born in Franklin co., O., in 1828. At an early age he evinced natural ability in the management of horses. In 1856 he went to Texas, and on his return to Ohio he began to give public exhibitions of his skill, subduing the most vicious and wildest



RASPBERRY.

horses and making them obedient to his will. About 1861 he visited Europe. He died in Cleveland, O., Oct. 4, 1866.

**Raritan**, a river of New Jersey, formed by two branches which unitedly flow S. E., and fall into Raritan Bay near Perth Amboy. It is navigable as far as New Brunswick.

**Rashi**, from the initials of Rabbi Shelomo Izaaki, the greatest Jewish commentator and exegete; born in Troyes, France, about 1040. His chief work is his "Commentary" on the whole of the Old Testament. This "Commentary" was the first book ever printed in Hebrew. He was the author of numerous other works. He died July 13, 1105.

**Raskolniki**, the collective name given to the adherents of the dissenting sects in Russia, which have originated by secession from the State Church. The great majority of these sects date originally from the middle of the 17th century, when the liturgical books, etc., were revised under the patriarch Nikon. The Raskolniki clung to the old texts. Their numbers are variously estimated at from 3,000,000 to 11,000,000.

**Rasp**, a coarse file having, instead of chisel-cut teeth, its surface dotted with separate protruding teeth, formed by the indentations of a pointed punch.

**Raspail, Francois Vincent**, a French chemist; born in Carpentras, France, Jan. 29, 1794. He is by some considered the creator of organic chemistry. He died Jan. 8, 1878.

**Raspberry**, a shrubby plant with many suckers. Found in America and in the N. of Europe and Asia. The species in gardens is the wild plant, greatly improved by cultivation. The fruit resembles the strawberry in not becoming acid in the stomach. There are red and yellow varieties.

**Rasse**, a carnivorous quadruped, closely allied to the civet, spread over a great extent of Asia. Its perfume, which is secreted in a double pouch, is much valued by the Javanese.

**Rassieur, Leo**, an American lawyer; born in Wadern, Prussia, April 19, 1844; came to the United States in early childhood. At the outbreak of the Civil War he volunteered as a private in the Union army, rising to the rank of major in 1865. He was admitted to the St. Louis bar in 1867; was elected judge of the Probate Court on Jan. 1, 1899.

**Rastenburg**, a town of Prussia, on the Guber river, 43 miles N. of where East Prussia's border touches Russian Poland, and 64 miles S. E. of Königsberg; is principally engaged in the manufacture of flour, sugar, oil, beer, and machinery. Pop. about 13,000.

**Rat**, in zoölogy, a name popularly applied to the larger murines, but more strictly applicable to two species, the black rat and the brown, or Norway rat. Figuratively: (1) One who deserts his party (especially in politics), as rats are said to forsake a

falling house or a doomed ship. (2) A workman who takes work for less than current wages, or who takes work in place of a striker.

**Rata**, a New Zealand tree related to various species of ironwood. The tree begins life as a climber, attached to other forest trees, and attains a height of 150 feet; but when it has killed the supporting stem the rata is able to sustain its own weight and to grow on as an independent tree, attaining ultimately a height of nearly 200 feet.

**Ratafia**, a fine spirituous liquor flavored with the kernels of several kinds of fruits, particularly of cherries, apricots, peaches, and almonds.

**Ratel**, a carnivorous quadruped of the badger family, found chiefly in South and East Africa, and in India. It is said to live principally on honey. The Indian ratel, however, eats also rats, birds, frogs, white ants, and various insects; and in the N. of India, where it is accused of digging out dead bodies, it is popularly known as the grave-digger.

**Ratibor**, a town of Germany in Silesia, on the left bank of the Oder river, 13 miles from the Austrian frontier, 97 miles S. E. of Breslau, on the main line to Oderberg. It was formerly the capital of an independent duchy, which existed in 1288-1532, and afterward passed successively to Austria and Prussia, and is now engaged in the manufacture of machinery, railway appliances, iron wares, tobacco, cigars, sugar, furniture, and glass. Pop. about 36,000.

**Ratification**, in law, the confirmation, sanction or approval given by a person who has arrived at his majority to acts done by him during his minority. It also means any act, public or private, which confirms or establishes a proposed transaction, incomplete until ratified.

**Ratio**, in mathematics: The measure of the relation which one quantity bears to another of the same kind.

**Rationalism**, as a "system of belief regulated by reason," might be expected to mean the opposite of irrationality, ignorance, and perverse prejudice. But in ordinary usage, general as well as theological, the use of the word is substantially different. It is generally employed as a term of re-

proach for those who, without utterly denying or attempting to overthrow the foundations of religion, make such concessions as tend to subvert the faith. They rely, more or less exclusively and blameworthy, on mere human reason instead of simply, frankly, and fully accepting the dicta of the divine word. An atheist would not be spoken of as a rationalist, nor would an irreligious, blaspheming freethinker.

**Rat Snake**, a powerful snake, attaining a length of seven feet and upward. Common in India and Ceylon. It frequently enters houses in search of mice, rats, and young fowls. It is fierce, and always ready to bite when annoyed.

**Rattan**, the commercial name for the stem of various species of the genus *Calamus*. They abound in Southern Asia in moist situations, and are used for making splints for chair seats and backs, hanks for sails, etc. The larger species grow to a size of three inches diameter, and to a height of 100 feet.



RATTLESNAKE.

**Rattlesnake**, the English name for any species of the American genus *Crotalus*, the tail of which is furnished with a rattle. Garman enumerates 12 species and 13 varieties. The poison of the rattlesnake is usually fatal to man, though fortunately they are sluggish, and never attempt to strike unless they are molested. They are widely distributed on the American continent; but advancing civilization is rapidly thinning their numbers.

**Rattlesnake Root**, an American plant used to cure the bite of the rattlesnake.

**Rauhes Haus** ("the Rough House"), the name of an institution founded at Horn, near Hamburg, in connection with the German Home Mission. It is partly a refuge for neglected children; partly a boarding school for the moral and intellectual education of children of the higher classes; and, a training school for those who wish to become teachers or officials in houses of correction. It was opened Nov. 1, 1831. By the addition of new houses the whole has been very much enlarged. The children live in families of 12. In connection with the Rauhes Haus there was founded in 1845 a kind of conventual institute for the education of young men as superintendents of similar institutions.

**Raum, Green Berry**, an American lawyer; born in Golconda, Ill., Dec. 3, 1829; studied law, and was admitted to the bar (1853). Three years later he took his family to Kansas. When the war broke out he enlisted, and was appointed major in the 56th Illinois regiment, and when he finally resigned his commission he had risen from major to Brigadier-General. In 1866 he was elected to Congress; was Commissioner of Internal Revenue in 1876-1883; and Commissioner of Pensions in 1889-1893. Died in 1909.

**Raumer, Friedrich Ludwig Georg von**, a German historian; born in Worlitz, near Dessau, Anhalt, May 14, 1781. He studied law at Halle and Gottingen, and entered the Prussian state service in 1801. In the years 1830-1843 he made extensive journeys, coming as far as the United States: the observations made during these trips were written in several books dealing with the United States, etc. He died in Berlin, Prussia, June 14, 1873.

**Raumer, Karl Georg von**, a German geologist and geographer, a brother of the preceding; born in Worlitz, Germany, April 9, 1783; studied at Gottingen and Halle, and at the Mining Academy at Freiberg; was appointed Professor of Mineralogy at Breslau, in 1811; in 1827, appointed Professor of Mineralogy and Natural History at Erlangen, where he died June 2, 1865.

**Raven**, a large bird of the crow family. The raven has played an im-

portant part in mythology and folklore. It is the first bird mentioned by name in the Old Testament; by the ministry of ravens Elijah was fed, and they were to be the ministers of vengeance on unruly children. The raven was the bird of Odin, and in classic mythology was of ill-omen, a character often attributed to it by the early English dramatists. Marlowe calls it the "sad presageful raven," and Shakespeare repeatedly refers to the belief that its appearance foreboded misfortune. This belief, which is widespread, probably arose from the preternaturally grave manner of the bird, its sable plumage, and the readiness with which it learns to imitate human speech.



RAVEN: CORVUS CORAX.

**Ravenna**, a city of Italy, capital of a province, on the Montone, four miles W. of the Adriatic, and 43 miles S. E. of Bologna. It is an ancient city with numerous historical buildings. Pop. (1926 Est.) 93,400.

**Ravenscroft, Thomas**, an English composer; born in 1592. He was trained in St. Paul's choir, London, and received the degree of bachelor of music from Cambridge. In 1621 he published his "Whole Book of Psalms," containing a tune for each of the 150 psalms, harmonized in four parts by all the great musicians of the period. He died in 1640.

**Ravogli, Augustus**, an American surgeon; born in Rome, Italy, Feb. 7, 1851; was graduated at the Medical

Department of the University of Rome, Italy, in 1873. and served as surgeon in the military hospital of the Italian army for several years. In 1880 he came to the United States and settled in Cincinnati, O.; was afterward made Professor of Dermatology and Syphilography at the Medical Department of the University of Cincinnati.

**Raw, Charles**, an American archaeologist; born in Vervien, Belgium, in 1826; was educated in Germany, and settled in the United States in 1848. He was made curator of the Department of Antiquities in the United States Museum in Washington, D. C., in 1875. About this time he began to devote himself to the study of American archaeology, in which he became an eminent authority. He died in Philadelphia, Pa., July 25, 1887.

**Rawitsch (Pol. RAWICZ)**, a town of Prussia near the Silesian border, 37 miles N. of Breslau, at the junction of the railway to Posen and Liegnitz; was founded during the Thirty Years' War, and on the second partition of Poland in 1793 passed to Prussia; manufactures cigars and snuff. Pop. about 10,000.

**Rawle, William Henry**, an American lawyer; born in Philadelphia, Pa., Aug. 31, 1823; was graduated at the University of Pennsylvania in 1841; was admitted to the bar in 1844 and attained eminence in practice. On the first call for volunteers in 1861 he joined the artillery in the Union army, and when a similar call was issued in 1863 he served as quartermaster. He was vice-provost of the Law Academy in 1865-1873, and vice-chancellor of the Law Association from 1880 till his death in Philadelphia, April 19, 1899.

**Rawlins, John Aaron**, an American military officer; born in Galena, Ill., Feb. 13, 1831. Before the Civil War he was a lawyer; adjutant-general of General Grant in September, 1861, and served as such in the campaigns of 1862 and 1863; in March, 1865, was appointed chief of General Grant's staff, with the rank of Brigadier-General in the U. S. A. He became Secretary of War in March, 1869. He died in Washington, D. C., Sept. 9, 1869.



**Rawlins, Joseph Lafayette**, an American legislator; born in Salt Lake co., Utah, March 28, 1850; was educated at the University of Indiana; was a Professor at the University of Deseret in Salt Lake City in 1873-1875; in the latter year was admitted to the bar, and practised till 1892, when he was elected a delegate to Congress. He was U. S. Senator in 1897-1903.

**Rawlinson, George**, an English Orientalist; born in Chadlington, England, Nov. 23, 1812; educated at Cambridge; was elected Camden Professor of Ancient History in 1861, and made a canon of Canterbury in 1872. He died at Canterbury, England, October 6, 1902.

**Rawlinson, Sir Henry Creswicke**, an English Orientalist and diplomatist; born in Chadlington, England, April 11, 1810. In 1833 he went to Persia. During the six years he spent there he began to study the cuneiform inscriptions, and made a translation of Darius' famous Behistun inscription. After he left Persia he held command of Kandahar, 1840-1842; was appointed political agent at Bagdad in 1844, and consul-general there in 1851. Five years later he returned home to England. In 1858 he went back to Persia as British minister, but remained at Teheran only one year. Died in London, March 5, 1895.

**Rawson, Edward Kirk**, an American educator; born in Albany, N. Y., Feb. 21, 1846; was graduated at Yale University in 1868 and at the Andover Theological Seminary in 1872; was ordained in the Congregational Church; served as a chaplain in the United States navy in 1871-90; was placed in charge of the Department of Ethics and English Studies at the Naval Academy in 1888; made superintendent of "Naval War Records," March 31, 1897; and was retired in 1908. His publications include "Twenty Famous Naval Battles."

**Ray**, of a composite flower, the outer or circumferential whorl of florets, as distinguished from those of the disk. In ichthyology, one of the radiating, bony rods serving to support the fins. In optics, a line of light proceeding from a radiant point or a point of reflection.

**Ray**, a family of fishes, including the skate and allied forms. They may be divided into two groups: Rays proper, with a short snout, and skates (attaining a much larger size), with a long, pointed snout.

**Ray, or Wray, John**, an English naturalist; born in Black Notley, Essex, England, Nov. 29, 1628. Ray's zoological works are considered by Cuvier as the foundation of modern zoölogy. He died in Black Notley, Jan. 17, 1705.

**Ray, George W.**, an American lawyer; born in Otselic, N. Y., Feb. 3, 1844; was reared on a farm and received his education at Norwich Academy. At the beginning of the Civil War he entered the Union army as a private in the 19th New York Volunteers. After the war he studied law and was admitted to the bar in November, 1867; served in Congress, 1883-5 and 1891-1902; resigned to become U. S. District Judge, Northern District of New York.

**Rayleigh, John Strutt, 3d Baron**, an English scientist; born in Essex, England, Nov. 12, 1842; was graduated at Cambridge, in 1865. Columbia College, New York, bestowed on him the Barnard medal for "meritorious service to science" since he shares with Ramsey the merit of discovering the element argon. He wrote many scientific papers. Died, 1919.

**Raymond, Bradford Paul**, an American clergyman; born in Stamford, Conn., April 22, 1846; was educated at Hamline University, Minn., and Lawrence University, Wis., and was graduated at the Theological School of Boston University and ordained in the Methodist Episcopal Church in 1874. He was president of Lawrence University from 1883 to 1889, resigning to become president of Wesleyan University, Middletown, Conn. He died Feb. 27, 1916.

**Raymond, Jerome Hall**, an American educator; born in Clinton, Ia., March 10, 1869; was graduated at the Northwestern University in 1892; president and Professor of Economics and Sociology at the West Virginia University in 1897-1901; Associate Professor of Sociology at University of Chicago till 1909; then president Toledo University.

**Raymond, Henry Jarvis**, an American journalist; born in Lima, N. Y., Jan. 24, 1820; was graduated at the University of Vermont in 1840; in 1841 he became managing editor of the New York "Tribune." In 1849 he was elected to the State Assembly; was reelected and made speaker, but relinquished his position on the "Courier," and traveled in Europe on account of ill health. On his return to New York, in 1851, he established the New York "Times"; was chosen lieutenant-governor of New York; was again elected to the State Legislature, and, in 1864, was chosen as representative from New York to the 39th Congress. He died in New York, June 18, 1869.

**Raymond, John T.**, right name John O'Brien, an American actor; born in Buffalo, N. Y., April 5, 1836. He was educated for a mercantile life, but the ways of business did not suit him. In 1867 he went to England. He died in Evansville, Ind., April 10, 1887.

**Raymond, Rossiter Worthington**, an American metallurgist; born in Cincinnati, O., April 27, 1840; was graduated at the Brooklyn Polytechnic Institute in 1858. He practised in New York city as a consulting engineer in 1864-1868; lectured on economic geology at Lafayette College in 1870-1872. He was United States commissioner to the Vienna Exposition in 1873; New York State commissioner of electric subways for Brooklyn in 1885.

**Raymond, William Galt**, an American civil engineer; born in Princeton, Ia., March 2, 1859; studied at the Kansas State University and was graduated at Washington University in 1884; was instructor of Civil Engineering at the California State University in 1884-90; Professor of Geodesy, Road Engineering, and Topographical Drawing, Rensselaer Polytechnic Institute 1892-1904; then of Civil Engineering.

**Raynouard, Francois Juste Marie**, French poet and philologist; born 1761; died 1836. He revised the study of the Provençal language.

**Razorbuck**, one of the largest species of the whale tribe, the great rorqual. Also a name given to a kind

of hog, especially in the S. part of the United States.

**Razorbill**, an aquatic bird, the common auk, the sole species of the genus, the great auk being extinct.

**Razor Fish**, a species of fish with a compressed body, much prized for the table.

**Razor Shell**, a genus of lamelli-branchiate mollusca; common on both sides of the Atlantic. These curious mollusks always live buried in the sand in an upright position, leaving only an opening shaped like a key hole, which corresponds with the two-siphon tubes. They are generally found at a depth of one or two feet.

**Rea, George Bronson**, an American electrical engineer; born in Brooklyn, N. J., Aug. 28, 1869; went to Cuba, where he practiced his profession till the beginning of the revolution; accompanied the insurgent forces of Gomez and Maceo as special correspondent of the New York "Herald." He was present at the bombardment of San Juan, Porto Rico, and in the operations before Santiago as correspondent of the New York "World." In the early part of the Porto Rico campaign he traveled through the island as an agent in the secret service of the United States government, and acquired information of large value to the American military authorities.

**Rea, Samuel**, born at Hollidaysburg, Pa., Sept. 21, 1855, the son of James D. Rea, died March 24, 1929, in Gladwyne, a suburb of Philadelphia. Mr. Rea was a noted engineer, and was chief engineer in charge of the belt line tunnel under Baltimore for the Baltimore & Ohio railroad. From here he returned to the Pennsylvania as assistant to the president. Promotion followed rapidly and he became president of this company in 1913. He retired in 1925 under pension regulations. Mr. Rea had conferred upon him the degree Sc. D. in recognition of his successful completion of the New York tunnel extension and station.

**Read, Hollis**, an American clergyman and author; born in Newfane, Vt., Aug. 26, 1802; was graduated at Williams College in 1826, and received his theological training at Princeton

Theological Seminary; was ordained in the Presbyterian Church in 1829, and went to Bombay, India, in 1830, where he remained five years. Returning to the United States he held various pastorates and engaged in other religious work. His publications include "Commerce and Christianity"; "India and Its People, Ancient and Modern"; etc. He died April 7, 1887.

**Read, John Elliot**, an American author; born in South Amherst, Mass., Jan. 4, 1845; author of numerous works on agriculture, Arctic exploration, and general history; engaged in journalism for many years.

**Read, John Meredith**, an American jurist; born in Philadelphia, Pa., July 21, 1797; was graduated at the University of Pennsylvania in 1812; admitted to the bar in 1818. He held a seat in the Pennsylvania Legislature in 1822-1823; was United States attorney for the Eastern District of Pennsylvania in 1837-1844; and served as chief-justice and attorney-general of Pennsylvania, and solicitor-general of the United States in 1860-1874. He affiliated with the Republican party when it was formed and in the presidential campaign of 1856 made an address on the "Power of Congress over Slavery in the Territories," which had much influence throughout the country. In 1858, on the first victory of the Republican party in Pennsylvania, he was elected judge of the Supreme Court by a majority of 30,000. In 1860 he was mentioned as a candidate for the presidential nomination with Abraham Lincoln for Vice-President. He died in Philadelphia, Pa., Nov. 29, 1874.

**Read, John Meredith**, an American diplomatist; born in Philadelphia, Pa., Feb. 27, 1837; was graduated at Brown University and went through a legal course at the Albany Law School; was also a student in a military school. When the Civil War broke out he enlisted and while in service early attained the rank of Brigadier-General of volunteers. In 1868 he was appointed United States consul-general at Paris. He was United States minister in Greece in 1873-1880. He died in Paris, France, Dec. 27, 1896.

**Read, Nathan**, an American inventor; claimed to have been the first

to use steam engines for propelling boats and carriages; born in Worcester co., Mass., in 1759. He entered Harvard College in 1777; was graduated in 1781; studied medicine; and started the Salem iron factory in 1796. In 1807, he removed to Belfast, Me., and took out a patent for an improved steam engine boiler in 1791. He converted the condensing engine of Watt into a complete working, portable, high-pressure engine, 12 years before the high-pressure engine was known. In 1790 he petitioned Congress for a patent for land carriages to be driven by steam. It created so much amusement that he withdrew it. He built, in 1789, a small steamboat, substantially identical with Fulton's of 1807. It is alleged that his combinations amounted to the inland steamers now in use. Died in Belfast, Me., in 1849.

**Read, Opie**, an American journalist; born in Nashville, Tenn., Dec. 22, 1852. He established and edited for many years the "Arkansaw Traveler." His studies of Arkansas life have been widely read.

**Read, Thomas Buchanan**, an American portrait painter and poet; born in Chester co., Pa., March 12, 1822; died in New York, May 11, 1872.

**Reade, Charles**, an English novelist; born in Ipsden House, Oxfordshire, England, June 8, 1814. He was educated at Oxford. In 1843 he was called to the bar, and it soon became obvious that his chosen career was that of literature. The books by which he first became known were his "Peg Woffington" and "Christie Johnstone." He died in London, England, April 11, 1884.

**Reade, John**, an Irish-Canadian clergyman and journalist; born in Ballyshannon, Ireland, Nov. 13, 1837. He went to Canada in 1856, where he engaged in teaching, law, preaching, and journalism.

**Reader, Francis Smith**, an American journalist; born in Coal Center, Pa., Nov. 17, 1842; served with the Union army throughout the Civil War; was taken prisoner, June 20, 1864, while on scout duty, but escaped with three others while on the way to Andersonville. Later he became editor of the "Beaver Valley News."

**Reading**, city and capital of Berks county, Pa.; on the Schuylkill river and canal and the Philadelphia & Reading and other railroads; 58 miles N. W. of Philadelphia; has a charming scenic environment, with fine mountain attractions for the tourist; is in a rich grain growing and iron-ore, limestone, and coal mining region; has varied manufactures, with output reported in 1910 as valued at \$51,135,000, and an assessed property valuation (1916) of \$62,358,255; and contains Mineral Springs and Penn's parks, and the Reading, St. Joseph's, and Homeopathic hospitals. Pop. (1930) 111,171.

**Reagan, John Henninger**, an American jurist; born in Sevier co., Tenn., Oct. 8, 1818. At the age of 21 he settled in Texas; in 1856 was elected judge of the district court, but resigned to go to Congress; during the Civil War was Postmaster-General of the Confederate States, and Acting Secretary of the Treasury, member of the Constitutional Convention of his State in 1875, and of Congress in 1875-1887; United States Senator in 1887-1891; and afterward chairman of the Texas State Railroad Commission. He died March 6, 1905.

**Reagent**, in chemistry, any substance employed to bring about a chemical reaction or change in another element, or compound.

**Realf, Richard**, an English-American poet; born in Framfield, Sussex, England, June 14, 1834. In 1854 he came to the United States, enlisted in the army in 1862, and wrote some of his best lyrics in the field. His most admired poems are "My Slain," "An Old Man's Idyl," and "Indirection." Died in Oakland, Cal., Oct. 28, 1878.

**Realism**, in philosophy, a doctrine diametrically opposed to Nominalism, as involving the belief that genus and species are real things, existing independently of our conceptions and their expressions, and that these are alike actually the object of our thoughts when we make use of the terms. Again, as opposed to Idealism, the word implies an intuitive cognition of the external object, instead of merely a mediate and representative knowledge of it.

In art and literature the word realism or naturalism is employed to describe a method of representation without idealization, which in our day in France has been raised to a system and claims a monopoly of truth in its artistic treatment of the facts of nature and life.

**Ream**, a quantity of paper of any size containing 20 quires or 480 sheets. A common practice is now to count 500 sheets to the ream. Hence used for a large quantity of paper.

**Reaping Machine**, a machine for reaping or cutting down grain in the field. There are numerous varieties. In 1822 a self-sharpening mowing machine was patented in the United States. Between 1852 and 1874 nearly 3,000 patents for reaping machines were taken out for the United States. There are two kinds of self-delivery machines, the former laying the cut grain in swaths and the latter forming it into sheaves; this form being more frequently used.

**Rearick, Peter Anton**, an American naval officer; born in Maryland, Nov. 12, 1838; entered the navy in 1860; served through the Civil War on various vessels; was promoted chief engineer in 1874, and in that capacity served at various posts till February, 1900, when he was retired with the rank of rear-admiral under the provisions of the Naval Personnel Law. He died in Washington, D. C., Feb. 9, 1901.

**Reason**, in logic, the premise or premises of an argument, and especially the minor premise. In metaphysics, the power of thinking consecutively; the power of passing in mental review all the facts and principles bearing on a subject, and, after a careful consideration of their bearings, drawing conclusions in many cases conformable with truth.

**Reaumur, Rene Antoine Ferchault de**, a French physicist and naturalist; born in La Rochelle, France, Feb. 28, 1683. He went to Paris in 1703; in 1708 was chosen a member of the Academy of Sciences; and for nearly 50 years continued to be one of its most active members. As a natural philosopher he is celebrated for the invention of an improved thermometer, which he made known in

1731, but his greatest work is "Natural History of Insects" (6 vols.). Died in Maine, France, Oct. 18, 1757.

**Reaumur's Scale**, a scale for a thermometer, in which the two fixed points being as in the Centigrade, the division is into 80 instead of 100 parts. It is still occasionally used.

**Reavis, Logan Uriah**, an American journalist; born in Sangamon Bottom, Ill., March 26, 1831. In 1866 he removed to St. Louis, to which city he strenuously advocated the removal of the National capital. To promote this object he lectured extensively in all parts of the country. He went to England in 1879 to inaugurate a movement for the promotion of immigration to Missouri. His publications include: "St. Louis the Future Great City of the World"; "A Representative Life of Horace Greeley"; "Life of General William S. Harney"; etc. Died in St. Louis, Mo., April 25, 1889.

**Rebekah, Daughters of**, a degree in the ritual of Odd Fellowship, to which women are admitted.

**Rebellion**, the taking up of arms, whether by natural subjects or others, residing in the country, against a settled government. By international law rebellion is considered a crime, and all persons voluntarily abetting it are criminals whether subjects or foreigners.

**Rebisso, Louis T.**, an American sculptor; born in Italy, in 1837. Having taken an active part in Mazzini's attempt to establish an Italian republic, at the age of 20, he fled from Italy and made his way to Boston, Mass. Subsequently he went to Cincinnati, O., where his fame as an artist developed. His leading works are the equestrian statues of Gen. J. B. McPherson in Washington, D. C.; of Gen. U. S. Grant in Lincoln Park, Chicago, and of Gen. W. H. Harrison in Cincinnati. He died in Norwood, a suburb of Cincinnati, O., May 3, 1890.

**Rebus** ("by things"), a word, name or phrase represented by the figure of an object which resembles in sound the words, or syllables of the words, indicated; an enigmatical representation of words by the use of figures or pictures; thus, a "bolt" and a "tun" represent "Bolton."

**Recaption**, in law, recaption or reprisal is another species of remedy by the mere act of the party injured. This happens when any one has deprived another of his property in goods or chattels personal, or wrongfully detains one's wife, child, or servant; in which case the owner of the goods, and the husband, parent, or master, may lawfully claim and retake them, wherever he happens to find them; so it be not in a riotous manner, or attended with a breach of the peace.

**Receipt**, a written document, declaring that certain goods or a sum of money have been received. When made out in full, a receipt should contain (1) the date when the merchandise or money was received, (2) the name of the person or firm from whom received, (3) the name of the person who received it, and (4) for what the money is paid or deposited. A receipt may be in full or in part payment of an account, and operates accordingly. A receipt, though evidence of payment, is not absolute proof, and this evidence may be rebutted by proving that it was given under misapprehension.

**Receiver**, a person specially appointed by a court of justice to receive the rents and profits of land, or the produce of other property, which is in dispute in a cause in that court. The name is also given to a person appointed in suits concerning the estates of infants, or against executors, or between partners in business, or insolvents, for the purpose of winding up the concern.

**Receiver of Stolen Goods**, one who takes stolen goods from a thief, knowing them to be stolen, and incurs the guilt of partaking in the crime. In the United States the penalty is fixed by statutes in the several States.

**Rechabite**, a member of a section of the Kenites, called in Hebrew rechabim, from Rechab, the father of Jonadab, who enjoined his descendants to abstain from wine, from building houses, sowing seed, and planting vineyards, and commanded them to dwell in tents. Hence, one who abstains from alcoholic beverages; a teetotaler. Also a member of the Independent Order of Rechabites, a society founded on temperance principles in England in 1835, in the



## Reciprocal

United States in 1842, and in other countries later. The lodges are called "tents" in allusion to Jer. xxxv. 7. The total membership in 1916 was reported at 701,040, and the benefits disbursed since organization exceed \$15,000,000.

**Reciprocal**, in grammar, reflexive. Applied to verbs which have as an object a pronoun standing for the subject; as, "Bethink yourself." It is also applied to pronouns of this class. As a noun, that which is reciprocal to another thing. Specifically, in mathematics, the quotient resulting from the division of unity by the quantity.

**Reciprocity**, the quality or state of being reciprocal; specifically, reciprocal obligation or right; equal rights to be mutually granted and enjoyed, as, in political economy, the securing in commercial treaties between two or more nations mutual advantages to the same extent, e. g., the admission, mutually, of certain goods, supposed to be practically equivalent to each other, duty free, or at equal duties on importation.

**Reciprocity Treaty**, a treaty made between two countries for the purpose of regulating trade between them. The United States has entered into a number of such compacts, and the tariff bill of 1897 provided for the appointment of a special commissioner to negotiate such treaties. John A. Kasson was the first commissioner.

**Reclus, Jean Jacques Elisee**, a French geographer; born in Sainte-Foix la Grande, France, March 15, 1830. In consequence of his extreme democratic views he left France after the coup d'etat of 1851, and spent the next seven years in England, Ireland, North and Central America, and Colombia. He returned to Paris in 1858, and published an introduction to the "Dictionary of the Communes of France" (1864). While living in exile in Switzerland he began his masterpiece, "New General Geography." Reclus has also written another great work, a physical geography entitled "The Earth." He died July 4, 1905.

**Recognizance**, or **Recognisance**, in law, an obligation of record, which a man enters into before some court of record or magistrate duly authorized,

## Reconcentrado

with condition to do some particular act; as, to keep the peace, to pay a debt, or the like.

**Recollet**, or **Recollect**, **Friars** or **Nuns**, the name given to a reformed body of Franciscans. The society was founded in Spain, and thence spread throughout Europe, so that in France, before the Revolution, they had 168 houses. The order still exists at a few places.

**Reconcentrado** (Spanish), one of a class of Cubans during the final Cuban rebellion against Spain. Governor-General Weyler issued a decree that all of the peasant class not actively engaged in the insurrection but at their homes or ranches, should be "reconcentrated" in or near certain towns, disobedience to this decree incurring the penalty of death. Accordingly, these people, non-combatants and mostly old men beyond the ability of army service, feeble old women, children, and babies, were forced to leave their homes and to gather in herds in and near these towns, where they were without food and shelter, "reconcentrated," to starve and to suffer from exposure to the weather and lack of all comfort. These helpless victims were popularly called "reconcentrados." General Weyler's purpose in this "measure of war" was to desolate the island in certain parts so that the "insurgents" could not get aid and food. With this end in view, the abandoned homes were destroyed, and whatever remained of value to the Spaniards was confiscated. Whole districts in the most productive part of the island were thus laid waste. Sugar mills were burned and other industrial property was destroyed. Nearly 400,000 "reconcentrados" were forced to go within the Spanish lines, where no means of subsistence were provided for them. More than 200,000 died of starvation and disease, an appalling record in modern civilization.

The United States was shocked by this atrocity, and at this time could give but little aid to the sufferers, their undertakings, including Christian Herald work, being barred out or limited by Spanish authority. Later American work of "rescue in Cuba" was largely effective for this most unfortunate class. When the decree,

under General Blanco, was issued to permit the reconcentrados to return to their homes, there was but desolation where their homes had been. It was at this time that the American relief work, by readers of the "Christian Herald," Red Cross ministrations, and other help availed this helpless class, but not to the full extent of their capacities till the American army and navy had extinguished Spanish rule in the "Pearl of the Antilles."

**Reconstruction**, in United States history, a making-over of the political fabric of the States that composed the Southern Confederacy. At the close of the Civil War, these States were practically without governments, those which they had established after their withdrawal from the Union having been overthrown. They had been declared insurgents and therefore their relation to the United States government was that of a conquered territory.

When Congress assembled, in December, 1865, Republican opposition was manifest in an enactment that no State should be represented in either House till Congress had declared its right to representation. A bill was passed proposing the Fourteenth Amendment to the National Constitution, and declaring the right of representation to any States ratifying. The Civil-Rights Bill followed, and the bill enlarging the provisions of the freedman's bureau, was passed over the President's veto.

Congress then passed a series of laws, some of them over the President's veto. Among these were the Tenure of Office Act, establishment of universal suffrage in the territories, admission of Nebraska into the Union, and making General Grant irremovable as head of the army. Meantime, but one State, Tennessee, had been admitted, July 24, 1866, none of the others adopting the Fourteenth Amendment. In view of the situation, Congress divided the South into five military districts. A military governor was appointed for each district, and he was empowered to protect life and property through local courts or military commissions. Each governor was to supervise the election of delegates to a constitutional convention to which all but certain disqualified classes were

to be admitted, such delegates to be elected by those eligible to vote. It was provided that such constitutions should be ratified by a popular vote, and then placed before Congress; the next measure to be a ratification of the Fourteenth Amendment by the new Legislature so including the amendment in the State constitution, which act should entitle the State to representation in Congress. The bill with such provisions was passed over the President's veto, March 2, 1867. The provisions of the bill were carried out, and the constitutions which were adopted abolished slavery, renounced the right of secession, and agreed to pass no laws limiting the liberty of any class of citizens and repudiated the debts incurred during the Civil War. Governors and legislators were elected under these constitutions. Arkansas was admitted June 22, 1868; North Carolina, South Carolina, Georgia, Florida, Alabama, and Louisiana, June 28, 1868; Virginia, Jan. 26, 1870; Mississippi, Feb. 23, 1870; Texas, March 30, 1870. Congress did not complete the readmission of Georgia till July 15, 1870, that State having failed in its compliance with the general policy. The four States last named were compelled to ratify the Fifteenth Amendment also, before their admission, as a penalty for delay in complying with the plan of Congress. The Supreme Court of the United States in the case of Texas vs. White declared the action of Congress constitutional.

**Recorder**, the chief judicial officer of a city, exercising within it, in criminal matters, the jurisdiction of a court of record, whence his title is derived. The recorder of the city of New York is an important judicial officer, with power to try the highest crimes. Several distinguished men have held the office.

**Recording and Registering Machines**, devices that make a permanent record of events, dates and numbers. A large number of contrivances have been invented for registering and recording in the shortest time and with the least possible work.

**Recreative Religionists**, an association formed in England in December, 1866, for giving popular scientific lectures on Sunday evenings,

sacred music being performed at intervals. The Recreative Religionists have for some years figured in the registrar-general's returns of sects, having registered places of worship.

**Rectangle**, in geometry, a parallelogram or quadrilateral figure whose angles are all right angles. An equilateral rectangle is a square.

**Rectify**, to separate the lighter portions of any liquid, and render pure and homogeneous any alcohol, ether, or volatile oil, by repeated distillation.

**Rector**, in the Episcopal Church and also the Roman Catholic Church, a clergyman who has the cure of a parish. In the Roman Catholic Church, the head of a religious house; among the Jesuits, the head of a house that is a seminary or college, academy, or important public school.

**Rectum**, in anatomy, the lowest portion of the large intestine extending from the sigmoid flexure of the colon to the anus.

**Red**, a color resembling that of arterial blood; the color of that part of the solar spectrum which is farthest from violet; one of the three primary colors. Reds are derived from the three kingdoms of nature, carmine being derived from the cochineal insect, the lakes and madders from the vegetable world, and the others from the mineral world.

**Redan**, in fortifications, a work having two faces forming a salient angle in the direction from which an attack may be expected. It is open at the gorge. A double redan has a re-entering angle for mutual defense. The redan is the simplest field work, and is used for defending the avenues of approach to a village, bridge, or defile.

**Red Bat**, from the temperate parts of North America. Length about two inches; fur long and silky, generally light russet, tinged with yellow, darker and richer on the back.

**Redbird**, the popular name of several birds of the United States, as the summer redbird, and the Baltimore oriole or hang nest.

**Red Brocket**, a deer about 30 inches high, reddish-brown, with simple, unbranched antlers; females hornless. Habitat, the low, moist woods of South America.

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**Red Cedar**, a species of juniper found in North America and the West Indies; the heartwood is of a bright red, smooth, and moderately soft, and is in much request for the outsides of lead pencils.

**Red Coral**, an important genus of sclerobasic corals. Red coral is highly valued for the manufacture of jewelry, and is obtained from the coasts of Sicily, Italy, and other parts of the Mediterranean.

**Red Cross Society**, an international organization for the protection and care of the sick and wounded in war and for the care of sufferers from other large calamities. The organization is the result of an international treaty entered into by most of the leading nations at a convention held at Geneva, Switzerland, in August, 1864. This treaty sustains the neutrality of Red Cross Societies in all countries and on all waters covered by the compact, and insures to it the protection of all conflicting forces in the time of war. The original treaty covered all suffering caused by war; but today the Red Cross cares for the victims of pestilence, flood and fire as well as for the victims of war. The treaty provides that the hospital flag of every nation must be a red Greek cross on a white ground, and that every person, ambulance, and other parts of the service must be so designated. By the articles of the treaty, a sick or wounded soldier is a "neutral case." The land ambulances and the ambulance boats carrying the Red Cross flag move about wherever needed, all civilized nations deferring to their humane service. In the hospitals every soldier and sailor receives the best care and if cured is sent home as a non-combatant. The Red Cross treaty provides for the mitigation of the horrors of war. The nations that are parties to this treaty are: The United States, Venezuela, Bolivia, Chile, Peru, Argentina, Great Britain, Germany, France, Belgium, Russia, Austria, Sweden, Norway, Turkey, Greece, Spain, Italy, Serbia, Persia, the Roman States, Switzerland, Japan, and other governments to the number of 40 or more.

National Red Cross.—This national body was incorporated under the

laws of the District of Columbia, October 1, 1881, and was reincorporated April 17, 1893, for the relief of suffering by war, pestilence, famine, flood, fires, and other calamities of sufficient magnitude to be deemed national in extent. In 1905 it was reorganized on a stricter business basis, and incorporated by Congress, with William H. Taft, then Secretary of War, as its president.

Almost at the beginning of the World War (1914) a very determined and successful effort was made throughout the United States to enlarge the functions of the organization for eventualities and to increase its membership. Chapters, or local branches, were speedily formed in all sections, and as war conditions increased in gravity the chapters generally began collecting, preparing, and shipping to the fields of strife all manner of surgical and hospital supplies. After the United States had been forced into the war the activities of the chapters increased by leaps and bounds, and no more whole-hearted response to the promptings of patriotism and sympathy was to be found anywhere. The mobilization of an American war army and navy, with the added features of modern warfare, aeroplanes, destroyers, and submarines, at once speeded up the efforts of the Red Cross workers. It should be borne in mind that all the grand work of this organization was founded on popular, individual inspiration, for, though the National Government was the sponsor of the reorganized society, it gave no financial aid to it.

The intense fervor with which Americans of all classes and all degrees of wealth took hold of this magnificent demonstration of a people's concern for humanity's suffering was shown in June, 1917, when, in response to a call for \$100,000,000 in popular subscriptions to a Red Cross war fund, the amount sought was quickly over-subscribed by \$14,000,000.

On Aug. 7, 1917, President Wilson, under the authority of an Act of Congress passed in the preceding April, reorganized the American National Red Cross for the more effective service it would be called upon to render because of the country's participation in the war. The President's order

placed the organization on a strict military basis, under two chief officers to whom the rank of Major-General was given; former President William H. Taft, Chairman of the Red Cross Central Committee, and Henry P. Davison, Chairman of the Red Cross War Council. Harvey D. Gibson, recently President of the Liberty National Bank of New York City, was appointed the General Manager and Director-General of the new organization, with the rank of Colonel.

All these activities were supplemented in October, 1917, by a countrywide "drive" for 1,000,000 new Red Cross members at \$1 each, and by a second one during the week of Dec. 17-24 following. The expenditures for the fiscal year 1927-28 were \$24,966,291. The membership in 1928 was 4,058,949 and 6,529,252 juniors.

**Red Cross, The Royal,** a decoration instituted by Queen Victoria in 1883. It is conferred on any ladies, English or foreign, recommended by the Secretary of State for War, for special exertions in providing for the nursing, or for attending to sick and wounded soldiers and sailors. The decoration is a cross of crimson enamel gold-edged, attached to a dark-blue ribbon red-edged, tied in a bow and worn on the left shoulder.

**Redemption,** in commerce, repurchase by the issuer of notes, bills, bonds, or other evidence of debt, by paying their value in money to the holders. In law, the liberation or freeing of an estate from a mortgage; the repurchase of the right to reënter upon an estate on performance of the terms or conditions on which it was conveyed; the right of redeeming and reëntering into possession. In theology, ransoming. The ransom of sinners from the curse of the law, i. e., from the penalties of the violated law of God, effected through "the blood of Christ," i. e., through His atoning sacrifice.

**Redfield, Isaac Fletcher,** an American jurist; born in Wethersfield, Vt., April 10, 1804; was graduated at Dartmouth College in 1825. In 1835 he was made judge of the Supreme Court of Vermont, and in 1852 became chief-justice, retiring from the bench in 1860. He was Professor of Jurisprudence at Dart-

mouth College in 1857-1861, and special counsel for the United States in England and France in 1867-1869. He died March 23, 1876.

**Redfield, William Cox**, an American statesman; born in Albany, N. Y., June 18, 1858; received a public school education; removed to New York in 1877 and to Brooklyn in 1883; engaged in manufacturing; member of Congress in 1911-1913; Secretary of Commerce in 1913-1919.

**Red Fish**, a species of fish found on the Atlantic coast of North America, a large red fish caught in considerable numbers for food.

**Red Lead**, an oxide of lead, produced by heating the protoxide in contact with air. It is much used as a pigment, and is commonly known as minium.

**Red Men, Improved Order of**, a social, fraternal, and benevolent secret organization founded on the customs and traditions of the aborigines of the American continent, and the oldest benevolent society in the United States of distinctively American origin and growth. The first authenticated Red Men's Society was organized in Philadelphia, Pa., early in 1763. The order is composed of subordinate bodies called tribes, officered by a sachem, senior sagamore, junior sagamore, prophet, chief of records, keeper of wampum, and minor subchiefs. In each State possessing necessary membership a Great Council is constituted, composed of representatives from the various tribes under its jurisdiction, and officered by similar chiefs to the subordinate tribes, with the prefixed title of Great. The Great Council of the United States is the supreme legislative body, and is composed of representatives from each Great Council. The number of great councils in 1924 was 65; the membership, 500,000; the benefits disbursed since organization, \$36,260,900; and benefits paid in 1916, \$1,648,894.

**Red Ochre**, a name common to a variety of pigments, rather than designating an individual color, and comprehending Indian red, light red, Venetian red, scarlet ochre, Indian ochre, redde, bole, and other oxides of iron. As a mineral it designates a soft earthy variety of hæmatite.

**Redpath, James**, an American journalist; born in Berwick, Scotland, Aug. 24, 1833. He became assistant editor of the "North American Review" in 1886. He published "The John Brown Invasion," "Life of John Brown," and "Talks About Ireland," etc. He died Feb. 10, 1891.

**Red Pine**, a species of pine also called Norway pine. Its wood is very resinous and durable, and is much used in house and shipbuilding. It produces turpentine, tar, pitch, resin, and lampblack.

**Red River**, the lowest W. branch of the Mississippi, rises near the E. border of New Mexico, flows E. through Texas, forming the entire S. boundary of Indian Territory, thence S. E. through Arkansas and Louisiana and enters the Mississippi below lat. 31° N. It is 1,600 miles long. It is navigable for seven months to Shreveport (350 miles).

**Red River of the North**, a navigable river of the United States and Canada, rises in Elbow Lake, Minn., near the sources of the Mississippi, and flows S. and W. to Breckinridge, then N., forming the boundary between Minnesota and North Dakota, and so into Manitoba and through a flat country to Lake Winnipeg. Its course is 665 miles (525 in the United States). The Red River Settlement was the origin of Manitoba.

**Red Root**, a genus of deciduous shrubs. The common red root of North America which abounds from Canada to Florida, is a shrub of two to four feet high, with beautiful thyrsi of numerous small white flowers. It is sometimes called New Jersey tea, an infusion of its leaves being sometimes used as tea. A Mexican species has blue flowers, and a California kind is used for evergreen hedges.

**Red Sea**, an arm of the Indian Ocean, running N. N. W. from the Gulf of Aden, with which it communicates by the Strait of Bab-el-Mandeb, 13½ miles across. Its length is about 1,200 miles, and its width in the central portion is between 100 and 200 miles; the greatest breadth being about 205 miles; it narrows toward the S. entrance, while in the N. it is divided by the peninsula of Sinai into two gulfs, the Gulf of Suez, 170 miles long



by 30 miles wide, and the Gulf of Akaba, 100 miles in length.

In ancient times the Red Sea was used as the means of communication by the Phœnicians and other maritime peoples, till the discovery of the route around the Cape of Good Hope diverted the traffic into another channel, only to be revived, however, on a much more extensive scale with the construction of the Suez Canal.

**Red Snow**, snow colored red. Aristotle hinted at its existence; Saussure in 1760 discovered it on the St. Bernard, and Captain Ross in 1819 brought specimens from the Arctic regions. He had found eight miles of cliffs, 600 feet high, colored by it, in many places to the depth of 12 feet, where the rock was reached. Captain Parry and other Arctic explorers have since met with it abundantly. All authorities agree that it arises from minute organisms, vegetable or animal. Much of it is colored by the red snow plant.

**Redstart**, a fly-catching warbler. Male black with patches of orange-red. Female, olive with yellow patches.

**Red Sunsets**. The autumn of 1883 and the succeeding few months were noteworthy for the occurrence of brilliant phenomena in the W. sky in every part of the globe, but especially in the Indian Ocean and the South Pacific. Shortly after sunset a vivid red glow suffused the entire W. sky, remaining for upward of an hour, when it would slowly fade away. In the latitudes of North America these red sunsets were of almost nightly occurrence for several months. In striving to account for these strange manifestations a number of solutions were offered, but the theory that met with greatest acceptance was that they emanated from volcanic dust and gaseous matter vomited by Krakatoa, in Sunda Straits. Calculations demonstrated the fact that the manifestations of the red glow coincided with the course which such vapors would take on being wafted away by the prevailing winds. But this theory found many opponents.

**Red Top**, a well-known species of bent-grass, highly valued in the United States for pasturage and hay for cattle.

**Redway**, Jaques Wardlaw, an American geographer; born in Nash-

ville, Tenn., in May, 1849. He engaged in mining in California and Arizona; traveled in South America, Europe, and Asia, for the purpose of pursuing geographical investigations, and was author of several treatises on physical geography, etc., among them "Modern Facts and Ancient Fancies in Geography"; "Climate and the Gulf Stream"; "A Treatise on the Projection of Maps," etc.

**Redwing**, a North American passerine bird, of the family Icteridæ. Male, black with red spots, bordered with orange on the wings. The name is given in Europe to a species of thrush, closely allied to the common thrush.

**Redwood**, the name of various sorts of wood of a red color, as the wood of the redwood of Jamaica; of Andaman wood; of the redwood of the Bahamas; and of a coniferous tree of California, the redwood of the timber trade.

Redwood of California.—This tree is found only in California and in but a comparatively contracted area even there. The available redwood is now confined to about 318 miles of coast. The annual product in this region is about 320,000,000 feet, and it is estimated, at the present rate of consumption, that enough standing timber exists to last for 150 years.

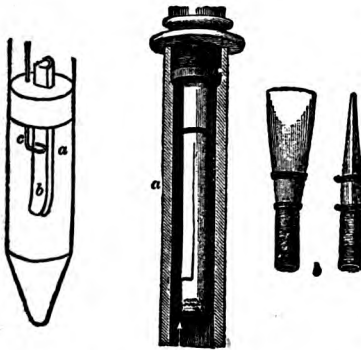
The lumber is becoming more in demand for decorative purposes. Its color, a light salmon when first cut, afterward turns to a deep red. When thoroughly dried there is no shrinkage and it readily yields to the chisel of the carver. Piano cases made from the wood are said to give increased resonance to the instrument. Large quantities are consumed for interior finishing with gratifying effects. In addition to other fine qualities the wood takes on a beautiful polish and even the stumpage, till recently considered worthless, is found to possess valuable qualities. The roots and woody excrescences at the base of the tree give fine effects in wavy outlines, and when polished the material is much valued for decorative purposes.

In the Eel river redwood district, Humboldt county, there are 80,000 acres of timber lands, which will produce, at a low estimate, 75,000 feet to the acre. In size the trees range from

four to six feet in diameter; if below 18 inches they are left standing. Of the larger sizes from 8,000 to 12,000 feet are produced from each tree. A single tree grown in this valley has produced 80,000 feet of merchantable lumber.

**Reebok, or Rheebok**, an antelope of South Africa. Length about 5 feet, height at shoulder 30 inches; uniform ash color on neck, shoulders, sides, croup, and thighs, white or light gray on under surface and inside of limbs. They live in small groups of five or six individuals.

**Reed**, in music, the sounding part of several instruments, such as the clarinet, bassoon, oboe, and bagpipe,



ORGAN REED.

BAGPIPE REEDS.

so called from its being made from the outer layer of a reed. The name is also applied to the speaking part of the organ, though made of metal.

**Reed, Andrew**, an English philanthropist; born in London, England, Nov. 27, 1788; was educated in his native city and in 1811 was there ordained pastor of an independent congregation. He visited the United States in 1834, where he studied educational and religious conditions. In 1813 he established the London Orphan Asylum; in 1827 the Infant Orphan Asylum; in 1847 the Asylum for Fatherless Children in Croydon; and later the Royal Hospital for Incurables and the Royal Asylum for Idiots. He was the author of "Visits to the American

Churches" (with the Rev. James Matheson, 2 vols. 1836); "The Day of Pentecost"; "The Revival of Religion" and "Advancement of Religion the Claim of the Times" (1847); etc. He died in London, England, Feb. 25, 1862.

**Reed, Charles Alfred Lee**, an American surgeon; born in Wolf Lake, Ind., July 9, 1856. He was Professor of Gynecology and Abdominal Surgery at the Cincinnati College of Medicine and Surgery in 1882-1895; became gynecologist at the Cincinnati Hospital in 1896; and was president of the American Medical Association in 1900-1901. His publications include many monographs in 1880-1900, and a "Text Book of Gynecology" (1900).

**Reed, Elizabeth Armstrong**, an American author; born in Winthrop, Me., May 16, 1842. She was the only woman whose work was ever accepted by the Philosophical Society of Great Britain. She was chairman of the Woman's Congress of Philology in Chicago in 1893, and was a member of several learned societies. Her works include "The Bible Triumphant," "Hindu Literature: or the Ancient Books of India," "Persian Literature," etc. She died June 16, 1915.

**Reed, George Edward**, an American educator; born in Brownville, Me., March 28, 1846. In 1889 was elected president of Dickinson College, Carlisle, Pa., and in 1899 became State Librarian of Pennsylvania.

**Reed, Hugh**, an American military officer; born in Richmond, Ind., Aug. 17, 1850; was graduated at the United States Military Academy in 1873. In 1884 he was granted leave of absence owing to ill health brought on by exposure on the Western plains, and was retired April 23, 1889. His publications include "A Calendar of the Dakota Nation," "Signal Tactics," "Cadet Regulations," "Artillery Tactics," "Military Science and Tactics," "Standard Infantry Tactics," etc.

**Reed, James**, an American clergyman; born in Boston, Mass., Dec. 8, 1834; was graduated at Harvard College in 1855. Later he was elected President of the New Church Theological School (Swedenborgian), Cambridge, Mass. He was also for several

years president of the Massachusetts Home for Intemperate Women, and editor of the "New Church Review." His publications include "Swedenborg and the New Church," "Religion and Life," and "Man and Woman, Equal but Unlike."

**Reed, James A.**, an American lawyer; born near Mansfield, O., Nov. 9, 1861; acquired a collegiate education in Iowa; was admitted to the bar and began practice at Cedar Rapids in 1885; removed to Kansas City, Mo., in 1887; was prosecuting attorney of Jackson Co., Mo., in 1898-1900; Mayor of Kansas City as a "reform" Democrat in 1900-4; and was elected U. S. Senator for the terms of 1911-23.

**Reed, Thomas Brackett**, an American statesman; born in Portland, Me., Oct. 18, 1839; was graduated at Bowdoin College in 1860; studied law; appointed assistant paymaster United States navy in 1864; admitted to the Portland bar; member of the Maine Legislature 1868-1869, and of the Senate 1870; State attorney-general, 1870-1872; member of Congress, 1877-1899; and speaker of 51st, 54th, and 55th Congresses. In 1896 Mr. Reed was a prominent candidate for the Republican presidential nomination. He resigned from Congress in 1899, and resumed the practice of law in New York city. He died of uræmia at Washington, D. C., Dec. 7, 1902.

**Reed Mace**, also known by the name of cat-tail, grows in ditches and marshy places, and in the borders of ponds, lakes, and rivers. They are tall, stout, erect plants, sometimes six or eight feet high, with creeping root stocks, long flag-like leaves, and long, dense, cylindrical, brown spikes of minute flowers. They are sometimes erroneously called bulrush.

**Reef**, the portion of a square sail between the head and any of the reef bands. The first reef in a square sail is included between the head and the upper reef band; the second reef between this and the next lower reef band, and so on. The object of the reef is to diminish the surface of the sail when the wind is blowing hard. A balance reef is the uppermost or closest reef extending diagonally upward from the outer leech when close-reefed.

**Reef**, a chain, mass, or range of rocks in various parts of the ocean, lying at or near the surface of the water.

**Reel**, a lively rustic dance. In the United States the Virginia reel is widely popular.

**Rees, John Krom**, an American educator; born in New York city, Oct. 27, 1851; was graduated at Columbia University in 1872, and at the Columbia School of Mines in 1875. Subsequently he was director of the observatory and instructor in geodesy and practical astronomy in Columbia University, and in 1892 became Professor of Astronomy there. He was president of the New York Academy of Sciences in 1894-1896; secretary of the American Metropolitan Society in 1882-1896; was elected Fellow of the Royal Astronomical Society of London; in 1901 was made Chevalier of the Legion of Honor; died March 9, 1907.

**Reese, David Meredith**, an American physician; born in Philadelphia, Pa., in 1800; was graduated at the Medical Department of the University of Maryland in 1820; removed to New York city, where he became eminent in his profession; was physician-in-chief at Bellevue Hospital for several years, and afterward was county and city superintendent of public schools. He was the author of "Observations on the Epidemic of Yellow Fever," "Review of the First Annual Report of the Anti-Slavery Society," "Medical Lexicon of Modern Terminology" (1855); etc. He died in New York city, Aug. 12, 1861.

**Reeves, Jesse Siddall**, an American educator; born in Richmond, Ind., Jan. 27, 1872; was admitted to the bar and began practice in his native city in 1897; lecturer on diplomatic history in Johns Hopkins University in 1905-6; assistant professor of political science in Dartmouth College in 1907-10; full professor of that branch in the University of Michigan from 1910; author of several works.

**Referendum**, a system of legislation which consults all the electors of a State as to whether new laws shall be confirmed. In some cantons of Switzerland a method resembling the referendum has been practiced since the 16th century. In all the Swiss

cantons, except Freiburg, the referendum is now established. According to the Swiss federal constitution, all constitutional amendments must be ratified by the Swiss electorate before they become law. Other measures must be submitted to the popular vote, if demanded within 90 days after their publication by 30,000 voters, or by the governments of eight cantons. During the 17 years, 1874 to 1891, out of 149 laws, 27 were referred to the people; of these 15 were rejected. The referendum has worked so well that it has conquered all opposition to it, and it is now generally regarded as a check on hasty and class legislation. There is a growing demand in the United States for the general introduction of direct legislation by means of the referendum, and in several places the system is practised. Amendments to State Constitutions are adopted, as a rule, by a referendum vote. In November, 1903, the electors of New York State voted by referendum on the question of a vast improvement of the Erie canal.

**Refining of Metals**, the processes by which the various metals are extracted from their ores, and obtained in a state of purity.

**Reflecting Microscope**, a form of microscope first proposed by Newton, in which the image formed by a small concave speculum may be viewed either by the naked eye or through an eye piece. The object is placed outside of the tube of the microscope, and reflects its image to the speculum by means of a plain mirror, inclined at an angle of  $45^\circ$  to the axis of the former.

**Reflecting Telescope**, a telescope in which the rays are received on an object-mirror and conveyed to a focus, at which the image is viewed by an eye piece.

**Reflection**, that which is reflected or produced by being reflected; an image given back from a reflecting surface. Also the act or habit of turning the mind to something which has already occupied it; thoughtful, attentive, or continued consideration or deliberation; meditation, thought.

**Reflector**, that which reflects, or throws back rays of light, heat, etc.; a reflecting surface. In optics, a device by which the rays proceeding from

a luminous or heated object are thrown back or diverted in a given direction. The term mirror is less comprehensive than that of reflector, being usually only applied to such surfaces as afford definite images and colors, while a reflector may not merely be used for throwing back the rays of light and heat, or of heat only, but also the waves of sound.

**Reform Acts**, a term applied to certain acts of the British Parliament by which the regulations as to the parliamentary representation of the people were altered.

**Reformation**, the term generally applied to the religious revolution in the 16th century which divided the Western Church into two sections, known as the Roman Catholic and the Protestant. Before this era the pope exercised absolute authority over the whole Christian Church with the exception of those countries in which the Greek or Eastern Church had been established. He also claimed supremacy in temporal affairs wherever his spiritual authority was recognized. Various abuses had, in process of time, sprung up in the Church, and attention had often been called to these both by laymen and clerics. The great movement known as the Reformation was started by Martin Luther, an Augustine monk of Erfurt, professor of theology in the University of Wittenberg; and what immediately occasioned it was the sale of indulgences in Germany by a duly accredited agent, Johann Tetzel, a Dominican monk, of Leipsic. Luther condemned this abuse, first in a sermon and afterwards in ninety-five theses or questions which he affixed to the door of the great Church, October 31st, 1517. Luther urged his spiritual superiors and the pope to put a stop to the traffic of Tetzel and to reform the corruption of the Church in general. A heated controversy now arose, Luther was fiercely assailed, and in 1520 excommunication was pronounced against him by Pope Leo X. Upon this the reformer appealed to a general council; and when his works were burned at Mainz, Cologne, and Louvain, he publicly committed the bull of excommunication with the papal canons and decrees to the flames (December, 1520). From this time Luther formally separated from the

Roman Church, and many of the principal German nobles, the most eminent scholars, and the University of Wittenberg, publicly declared in favor of the reformed doctrines and discipline. Luther's bold refusal to recant at the Diet of Worms (April 17th, 1521) gave him increased power, while the edict of Worms and the ban of the emperor made his cause a political matter. Leo's successor, Adrian VI., now considered it necessary to interfere, but in answer to his demands for the extirpation of the doctrines of Luther he received a list of a hundred complaints against the papal chair from the German states assembled at the Diet of Nurnberg (1522). While Luther was publishing his translation of the New Testament, which was soon followed by the translation of the Old, and while Melancthon was engaged on his *Loci Communes* (the first exposition of the Lutheran doctrines) serious preparations for the reform of ecclesiastical abuses were made in Pomerania, Silesia, in the Saxon cities, in Suabia, etc., and the Reformation made rapid progress in Germany. Luther's Liturgy had no sooner appeared (1522), than it was adopted in Magdeburg and elsewhere. Translations of the Bible into Dutch and French now appeared, and at Meux in France a Lutheran church was organized. In 1525 John, the successor of Luther's first patron Frederick in the Saxon electorate, Philip, landgrave of Hesse, and Albert of Brandenburg, duke of Prussia, publicly declared themselves Lutherans. Aided in great measure by the state of political affairs, the movement continued to spread rapidly. In these circumstances the Emperor convened the Diet of Augsburg (June 1530), at which Melancthon read a statement of the reformed doctrines, now known as the confession of Augsburg. The Catholics replied to this by requiring the reformers to return to the ancient church within a certain period. The princes who favored the new movement refused to comply with the demand, and in March of the following year they assembled at Schmalkald and formed the famous league, in terms of which they pledged themselves to uphold the Protestant cause. This decisive step soon attracted powerful support, largely because of its

political importance, and among others who joined the Schmalkald League were Francis I. of France and Henry VIII. of England. After the death of Luther (1546) war broke out, but at the Peace of Augsburg (1555) the Reformation may be said to have triumphed when each prince was permitted to adopt either the Reformed or the Roman Catholic faith, and Protestantism thus received legal recognition.

Both in Italy and Spain Protestantism was mostly confined to the higher and cultivated classes, the Reformed faith taking scarcely any hold on the people at large. In Naples, Venice, Florence, and other cities Protestant churches were opened; but Protestantism was extirpated in Italy by the vigorous action of the Inquisition. In Spain a few Protestant churches were established, and many persons of mark adopted the views of the Reformers. But here also the Inquisition succeeded in arresting the spread of the religious revolution. In the Swiss states the progress of Protestantism was of much more importance. It found a leader in Ulrich Zwingli, a preacher in Zurich, who, by sermons, pamphlets, and public discussions, induced that city to abolish the old and inaugurate a new Reformed Church. Ultimately this movement was merged in political dissensions between the Reformed and the Roman Catholic cantons, and Zwingli himself fell in battle (1531). Between Luther and Zwingli there were differences of opinion, chiefly concerning the Lord's Supper, in which the former showed considerable acrimony towards his fellow-reformer. After many tedious contests Calvin's creed was virtually accepted in the Netherlands and elsewhere, and it was introduced into Scotland by Knox. In France the Reformation seemed at first to find powerful support. Margaret, Queen of Navarre, sister of King Francis I., and many of the higher ecclesiastics favored the reformed doctrine. The New Testament was translated into French, churches to the number of 2,000 were established in 1556, and the Huguenots as the Protestants were called, formed a large religious party in the state. Unhappily, however, the religious element was mixed up with the political hatreds, and in the civil strifes before



and after the Massacre of St. Bartholomew (1572) the religious movement declined. The abjuration of Protestantism by Henry IV. (1593) was a blow to the Huguenots, and though they obtained toleration and certain privileges by the Edict of Nantes this was finally revoked in 1685.

The Reformation in England was only indirectly connected with the reform movement in Germany. Wyclif and the Lollards, the revival of learning, the writings of More, Colet, and Erasmus, the martyrdom of Thomas Bilney, had all combined to make the doctrine and discipline of the church unpopular. This feeling was greatly increased when the writings of Luther and Tyndal's translation of the Bible found eager readers. Then the political element came in to favor the popular reform movement. Henry VIII., in his efforts to obtain a divorce from Catherine, found it necessary to repudiate the papal supremacy and declare himself by act of Parliament (1534) the supreme head of the Church of England. To this the pope replied by threats of excommunication, which were not, however, immediately executed. Yet the breach with Rome was complete, so far, at least, as the king was concerned. This movement was continued and the Reformation effected in all essential points during the reign of Henry's successor, Edward VI. The Protestant ritual and teaching was adopted by the Church; all images were removed from churches; a new communion service took the place of the mass; a First Book of Common Prayer was compiled by Cranmer and purged of distinctive Roman doctrine; and in 1549 the First Act of Uniformity enjoined the use of this book in all the churches. Still further in 1551 the newly established faith of the Reformers was summed up in the Forty-two Articles of Religion, which, in the reign of Elizabeth, became the Thirty-nine Articles of the Church of England. By these and other means the Reformation was established gradually throughout England.

In Scotland the movement was more directly connected with the Continent, and in particular with Geneva. In 1546-47 the Scottish Reformer John Knox joined the Protestant

party; preached in Dundee, Perth, and St. Andrews, amid public tumult and the destruction of images, altars, and churches; and finally, under the protection of the Lords of Congregation, he established himself as a preacher of Protestantism in St. Giles', Edinburgh. From this center Knox travelled all over Scotland teaching the reformed faith; and such was the roused spirit of the people, that when the Scottish parliament assembled (1560) a popular petition was presented demanding the abolition of popery. This was promptly accomplished, and at the assembling of the new Church of Scotland shortly afterward, Knox presented his reformed system of government under the name of the First Book of Discipline, which was adopted by the assembly. The position thus secured by the reformer was maintained and the Reformation successfully established in Scotland. In Ireland for various causes the Reformation never made much progress.

**Reformatory Schools**, schools instituted for the training of juvenile offenders who have been convicted of an offense punishable by imprisonment.

**Reformed Church**, a religious body in the United States, whose designation has been changed from that of its progenitor, the Reformed Protestant Dutch Church. The Church was introduced into America in 1643. The Dutch language was used exclusively in worship down to 1763. The government of the Church is according to the Genevan model. The officers are ministers, elders, and deacons, who compose the consistory, to which the government of the individual church belongs. The particular synods, of which there are four, New York, Albany, New Brunswick, and Chicago, are delegated bodies composed of four ministers and four elders from each classis within the bounds of each synod. In 1867 the word "Dutch" was dropped from the corporate name of the body. "The Christian Intelligencer," a weekly journal devoted to the interests of the church was established in New York, 1828. There are two theological seminaries, one at New Brunswick, N. J., the other in connection

## Reformed Church

with Hope College, at Holland, Mich. Statistics: Number of churches, 640; ministers, 710; members, 124,938.

**Reformed Church in the United States**, formerly German Reformed Church in the United States of America, an offshoot of the Reformed Church of Germany. The worship of the Church is liturgical; its government is presbyterian. Reception into the full communion of the Church takes place by the rite of confirmation. Christmas, Good Friday, Easter, and Whitsunday are observed with much solemnity. Eleven English and five German papers are published in the interest of the Church; and there are 16 theological and literary institutions under its control. Statistics reported in 1916: Number of churches, 1,759; ministers, 1,213; communicants, 320,459.

**Reformed Episcopal Church**, a denomination organized by members of the Protestant Episcopal Church who differed with it in certain matters of church practice and discipline. Statistics in 1916: Churches, 80; ministers, 83; communicants, 10,800.

**Reformed Presbyterian Church, or Cameronians**, a body of Christians who profess to hold the principles of the Church of Scotland at the period of the second Reformation, between 1638 and 1650. Long an independent body, most of them were merged in the Free Church in 1876.

**Refraction.** When a beam of light traveling in a transparent medium, impinges obliquely upon the surface of another transparent medium, what occurs in the vast majority of cases is that a part of it is reflected, and a part of it enters the second medium, but in so doing is "refracted" or bent out of its former course. If, for example, the light travel in air and impinge obliquely on glass, the course of the refracted portion is bent so that the refracted light travels more directly or less obliquely through the glass; and, conversely, if the light travel in glass and impinge on an air surface, the portion which is refracted into the air will travel through the air more obliquely with respect to the refracting surface than the original light had approached it. The law of

## Regeneration

refraction was discovered by Snell in 1621, and is the following: The refracted ray is in the same plane with the incident and the reflected ray, and is therefore in the "plane of incidence," and the sine of the angle of incidence bears to the sine of the angle of refraction a ratio which remains constant, for any two media, whatever be the angle of incidence.

**Refuge, Cities of**, in Jewish law and history, six Levitical cities divinely appointed as places of refuge to one who had committed manslaughter, and was pursued by the "Revenge" or "Avenger" of Blood. If the case was proved to be one of murder, the perpetrator might be taken from the City of Refuge and put to death; if it was only manslaughter, the refugee had to remain in the city to which he had fled till released by the death of the high priest.

**Refugee**, a word that probably came into existence when the Protestants under Louis XIV. escaped from their oppressors to other lands, and a word was needed to describe the circumstances of their case. It is applied also to one who takes refuge; one who flees to a place of refuge or shelter, and to one who flies for refuge in time of persecution or political commotion to a foreign country.

**Regalecus**, the deal-fish. Each ventral fin is reduced to a long filament, dilated at the extremity, somewhat like the blade of an oar, whence they have been called oar fishes; caudal rudimentary or absent. Range wide; they have been taken in the Atlantic and Indian Oceans, the Mediterranean and on the coast of New Zealand. They are sometimes called king of the herrings, from the erroneous notion that they accompany shoals of the latter fish.

**Regalia**, the ensigns of royalty, including more particularly the apparatus of a coronation.

**Regatta**, originally a gondola race held annually with great pomp in Venice, and now applied to any important sailing or rowing race, in which a number of yachts or boats contend for prizes.

**Regeneration**, in biology, the genesis or production of new tissue to supply the place of an old texture lost

or removed. In some of the inferior animals an organ or a limb can thus be supplied; in man regeneration is much more limited. In Scripture, regeneration is the state of being born again, i. e., in a spiritual manner.

**Reggio** (DI CALABRIA), a seaport of S. Italy, on the Strait of Messina; 9 miles S. E. of the city of Messina; is the seat of an archbishop, and has a fine cathedral. The ancient Rhegium was founded by Greeks in the 8th century; was taken and destroyed by Dionysius of Syracuse, 387 B. C., the Romans, 270 B. C., Alaric, 410 A. D., Totila, 549, and the Saracens, 918; was captured by Robert Guiscard, 1060, Pedro of Aragon, 1282, and Garibaldians, 1860; and was ruined by earthquakes in 1783 and 1908. It has large agricultural, fishery, and manufacturing interests. **Pop.** (1926 Est.) 65,144.

**Regina**, city and capital of the Province of Saskatchewan, Canada; on branches of the Canadian Pacific, Canadian Northern, and Grand Trunk railways; 356 miles N. W. of Winnipeg; is the trade center of one of the most prolific wheat-growing regions of the Dominion; is the headquarters of the famous Northwest Mounted Police; and, besides its large farm trade, has manufactories of lumber, foundry products, bricks, and flour. **Pop.** (1930 Est.) 66,996.

**Register**, a device for automatically indicating the number of revolutions made or amount of work done by machinery; or recording steam, air, or water pressure, or other data, by means of apparatus deriving motion from the object or objects whose force, distance, velocity, direction, elevation, or numerical amount it is desired to ascertain. In music, the compass of a voice or instrument, or a portion of the compass of a voice; as the upper, middle, or lower register. Also, an organ stop, or the knob or handle by means of which the performer commands any given stop.

**Regnard, Jean Francois**, a French comic dramatist; born in Paris, in February, 1655. By common consent his rank in France is second to Moliere only. He died near Dourdan, France, Sept. 4, 1709.

**Regular Clergy**, the term applied in the Roman Catholic Church to

priests who have taken the vows, and who are bound to follow the rules of some monastic order, as opposed to the secular clergy, that is, parish priests, etc., not connected with any of the orders.

**Regulus**, the star Alpha Leonis, the brightest in the constellation of the Lion.

**Regulus, Marcus Attilius**, a Roman general, celebrated for his patriotism and devotion in the service of his country. Made consul a second time about 256 B. C., with his colleague, Manlius Vulso, he commanded in the first war against Carthage. Taken prisoner by the Carthaginians, he was sent to Rome with an embassy, that peace might be procured on favorable terms, and bound himself by an oath to return if the terms were rejected. He, however, considered it his duty to advise the continuance of the war; which, being determined on, no entreaties or supplications could prevent him from fulfilling his solemn engagement; and the Carthaginians, on his return, put him to a cruel death.

**Rehan** (originally Crehan), **Ada**, an American actress; born in Limerick, Ireland, April 22, 1860. In 1865 she came with her parents to the United States. She first appeared on the stage in Newark, N. J., when 14 years old, but afterward returned to her studies for a year. She then appeared in Philadelphia, and later in New York. In 1879 she joined Augustin Daly's company. She frequently played before London audiences, and also in France and in Germany.

**Reich, Jacques**, an American etcher; born in Waniskoltz, Hungary, Aug. 10, 1852; settled in the United States in 1873; became skilled in pen-and-ink drawings and in the etching of portraits on copper; removed to New York in 1885. His important work includes a series of portraits of American and English authors and other prominent persons; a half life-size plate of President Roosevelt; and a large etching of J. Pierpont Morgan.

**Reichenbach, Charles, Baron von**, a German scientist; born Feb. 12, 1788; died in 1869. He gave his attention to animal magnetism in connection with which he believed he had

discovered a new force called Od, regarding which he published various works. Among his chemical discoveries were paraffin and creosote.

**Reichsrath**, the representative council of the empire of Austria (q. v.)

**Reichstadt, Duke of**. See NAPOLEON II.

**Reichstag**, the representative legislative body of the German nation as a whole, as the Bundesrath is of the separate German States. All laws of the empire must receive the votes of an absolute majority of the Reichstag and the Bundesrath. The president of the Reichstag is elected by the deputies. See GERMAN EMPIRE.

**Reid, Mayne**, a British novelist; born in North Ireland, in 1818. His love of adventure took him to Mexico and then to the United States, where he traveled extensively as hunter or trader; he joined the United States army in 1845 and fought in the Mexican War. He afterward returned to London, where he became well known as a writer of thrilling juvenile stories, many of them based on his American experiences. He died near London, Oct. 22, 1883.

**Reid, Samuel Chester**, an American naval officer; born in Norwich, Conn., Aug. 25, 1783. He commanded the American privateer "General Armstrong," and repulsed the British attack in the harbor of Fayal, Azore Islands, Sept. 26, 1814, the enemy having three vessels with 2,000 men to his single vessel with 90 men. During 10 hours' fighting, the British lost 300 killed and wounded and the Americans two killed and seven wounded. He was made harbormaster and warden of the port of New York, invented a signal telegraph, reorganized the pilot-boat system, and established a lightship off Sandy Hook. He designed the present form of the United States flag, suggesting the retention of the original 13 stripes and the addition of a star for each new State. He died in New York city, Jan. 28, 1861.

**Reid, Thomas**, a Scotch philosopher; born in Strachan, Scotland, April 26, 1710. In 1764 he published his well-known work, "An Inquiry Into the Human Mind on the Principles of Common Sense." The same

year he succeeded Adam Smith as Professor of Moral Philosophy in Glasgow University, a position which he occupied till 1781. He was the earliest expounder of what is known as the Scotch school of philosophy, in which he was followed by Dugald Stewart and Sir William Hamilton. His doctrines were adopted also by several eminent French philosophers. He died Oct. 7, 1796.

**Reid, Whitelaw**, an American editor; born in Xenia, O., Oct. 27, 1837. He graduated at Miami University in 1856; was on the editorial staff of several leading Ohio papers and was war correspondent; in 1869 became managing editor of the New York "Tribune," and, after 1872, editor-in-chief and in financial control. He twice declined appointment as minister to Germany; and was minister to France in 1889-1892, where he negotiated valuable reciprocity treaties. In 1892 he was the unsuccessful Republican candidate for Vice-President. He represented the United States at Queen Victoria's jubilee in 1897; was a member of the American-Spanish Peace Commission in 1898; the special ambassador of the United States at the coronation of King Edward VII. in 1902; and ambassador to Great Britain from 1905 till his death in London, Dec. 15, 1912. His remains were borne to New York on the British cruiser "Natal."

**Reighard, Jacob Ellsworth**, an American educator; born in Laporte, Ind., July 2, 1861; was graduated at the University of Michigan in 1882; was placed in charge of the biological survey of the Great Lakes for the U. S. Fish Commission in 1898; and accepted the chair of zoölogy at the University of Michigan in 1892. Author of many scientific papers.

**Reign of Terror**, a period of the French Revolution, conspicuous for its horrors and cruelties. It is generally considered to extend from Jan. 21, 1793, the date of the execution of Louis XIV., to July 28, 1794, when Robespierre and other sanguinary leaders were guillotined on the spot where their victims had been killed.

**Reims**. See RHEIMS.

**Reindeer**, the only domesticated species of the deer family. It extends

## Reindeer Moss

over the boreal regions of both hemispheres, and runs into several well marked varieties. Many authors consider the American reindeer or caribou, which has never been domesticated, as a distinct species. Both the male and female have antlers, and these are not alike on both sides, the great palmated brow antler being, as a rule, developed on one side only. In the winter the fur is long, grayish brown on the body; neck, hind-quarters, and belly white. In summer the gray hair darkens into a sooty brown, and the white parts become gray. To the Laplander the reindeer is the only representative of wealth, and it serves him as a substitute for the horse, the cow, the sheep and the goat. It is extensively employed as a beast of draught and carriage, being broken to draw sledges, or to carry men or packages on its back. In 1891 domestic reindeer were introduced into Alaska by Dr. Sheldon Jackson for the benefit of the natives who frequently suffered for food, and for purposes of transportation. In 1898 Dr. Jackson, as agent of the United States government, procured a colony of Laplanders to train the natives in the care of the reindeer.

**Reindeer Moss**, a lichen which forms the winter food of the reindeer. It is abundant in the pine forests of Lapland, and flourishes even when they have been burnt. Reindeer feed upon it and dig for it when it is covered by snow. It tastes like wheat bran, but leaves a slightly burning sensation on the palate.

**Reinsch, Paul Samuel**, an American educator, author, and diplomat; born in Milwaukee, Wis., June 10, 1869; was graduated at the University of Wisconsin in 1892; made special studies in Rome and Paris; Assistant Professor of Political Science, University of Wisconsin, 1899-1901, and Professor, 1901-1913; Roosevelt Professor, Universities of Berlin and Leipzig, 1911-1912; delegate to the first Pan-American Scientific Congress, 1909; appointed Minister to China, 1913.

**Reisner, George Andrew**, an American Egyptologist, born in Indianapolis, Ind., Nov. 5, 1867; took graduate courses in Scientific lan-

## Religious Liberty

guages; was assistant in the Egyptian Department, Royal Museum in Berlin, 1895-6; instructor in Harvard University, 1896-7; Hearst lecturer and Director of the Hearst Egyptian Expedition from the University of California, 1899-1905; Director of the Egyptian Expedition of Harvard and the Boston Museum of Fine Arts, 1905-; curator of the Egyptian Department, Boston Museum of Fine Arts, 1910-; archaeologist in charge of the excavations by the Egyptian Government in Nubia, 1907-9; Director of the Harvard Palestine Expedition, 1907-10; and had charge of excavations at Bersheh, Giza Pyramids, Samaria, Lower Nubia, and Dongola.

**Relativity**, a theory first advanced by Einstein the celebrated German, in 1905. Its peculiar interest lies in the fact that Einstein distinguishes between absolute and relative concepts. To state the theory very simply: An absolute statement is valid for everyone without qualification. A relative concept has meaning only relatively to contain other ideas or conditions which must be stated in order to complete the meaning. The actual results of this theory as worked out by Einstein in conjunction with other famous scientists has succeeded in upsetting in many cases the hitherto unquestioned Euclidian and Newtonian laws,—particularly of gravitation.

**Release**, a discharge of a right; an instrument in writing, by which estates, rights, titles, entries, actions, and other things are extinguished, and discharged, and sometimes transferred, abridged, or enlarged.

**Relics**, articles regarded as sacred in the Roman Catholic and Greek Churches, such as the "Holy Coat of Treves," said to have been worn by Christ, alleged pieces of the cross on which Christ was crucified, alleged bones of martyrs and other persons held in reverence as saints, etc.

**Religious Liberty, or Liberty of Conscience**, is the recognition and assertion by the state of the right of every man, in the profession of opinion and in the outward forms and requirements of religion, to do or abstain for doing whatever his individual conscience or sense of right sug-



## Rembrandt

gests. Religious liberty is opposed to the imposition by the state of any arbitrary restrictions on forms of worship or the propagation of religious opinions, or to the enacting of any binding forms of worship or belief. The limit of religious liberty is necessarily the right of the state to maintain order, prevent excesses, and guard against encroachments on private right. In the organization of civil and ecclesiastical government which prevailed from Constantine to the Reformation, persecution was in general only limited by dissent; and universal submission to the dominant Church became the condition of religious peace throughout Christendom, while religious liberty was unknown. The contest of opinion begun at the Reformation had the effect of establishing religious liberty, as far as it at present exists, but the principle itself was so far from being understood and accepted in its purity by either party that it hardly suggested itself even to the most enlightened reasoners of that age. While the American colonies were dependent on Great Britain, religious liberty in the full sense existed only in Rhode Island, toleration in Maryland having been limited by laws which punished conscientious utterances regarding religious dogmas as blasphemy. For many years after independence the laws of Massachusetts, New Hampshire, and Connecticut limited religious liberty.

**Rembrandt, Van Ryn**, one of the most celebrated painters and engravers of the Dutch school; born in Leyden, Holland, July 15, 1606. He acquired his art from several masters at Amsterdam, and early in life grew famous, his studio being crowded with pupils, and his works selling rapidly. Rembrandt was master of all that relates to coloring, distribution of light and shade, and composition, and though deficient in other requisites of a true artist, it cannot be denied that his pencil is masterly and unique, possessing an energy and effect belonging to no other painter. His etchings have wonderful freedom, facility, and boldness. Rembrandt was twice married, resided during the greater part of his life at Amsterdam, and acquired a large fortune. He died in Amsterdam, and was buried Oct. 8, 1669.

## Remington

**Remenyi, Edouard**, an Hungarian violinist; born in Heves, Hungary, in 1830. In 1851, after the Hungarian revolution, he was forced to flee to the United States, but returned to Europe in 1853. In 1854 he visited London, where he was appointed solo violinist to Queen Victoria. In 1860 he obtained his amnesty and returned to Hungary, where he attained great distinction. In 1878 he returned to the United States, where he spent much of his time and gave many concerts, though during these years he also made visits to other countries. Died in San Francisco, Cal., May 15, 1898.

**Remey, George Collier**, an American naval officer; born in Burlington, Ia., Aug. 10, 1841; was graduated at the United States Naval Academy in 1859; served with distinction during the Civil War, and was captured during the assault on Fort Sumter, in 1863. When the war with Spain broke out he was placed in command of the naval base at Key West, Fla. He was promoted rear-admiral in 1898; was given command of the Asiatic Station at Yokohama in 1900, and in this capacity directed the operations of the U. S. naval forces in China; commanded the Asiatic Fleet in 1900-2; was retired in 1903.

**Remington, Philo**, an American inventor; born in Litchfield, N. Y., Oct. 31, 1816. He entered the small arms factory of his father, and for 25 years superintended the mechanical department. The perfecting of the Remington rifles and the Remington typewriter was largely due to his skill. He died in 1889.

**Remington, Frederick**, an American artist and author; born in Canton, N. Y., Oct. 4, 1861; was educated at the Yale Art School, and at the Art Students' League, New York. He was one of the most conspicuous of American artists in "black and white." He died Dec. 26, 1909.

**Remington, Joseph Price**, an American pharmacist; born in Philadelphia, Pa., March 26, 1847; was graduated at the Philadelphia College of Pharmacy in 1866; and became Professor in the Pharmaceutical Laboratory and dean of the Philadelphia College of Pharmacy in 1893. He is a member of many American and for-

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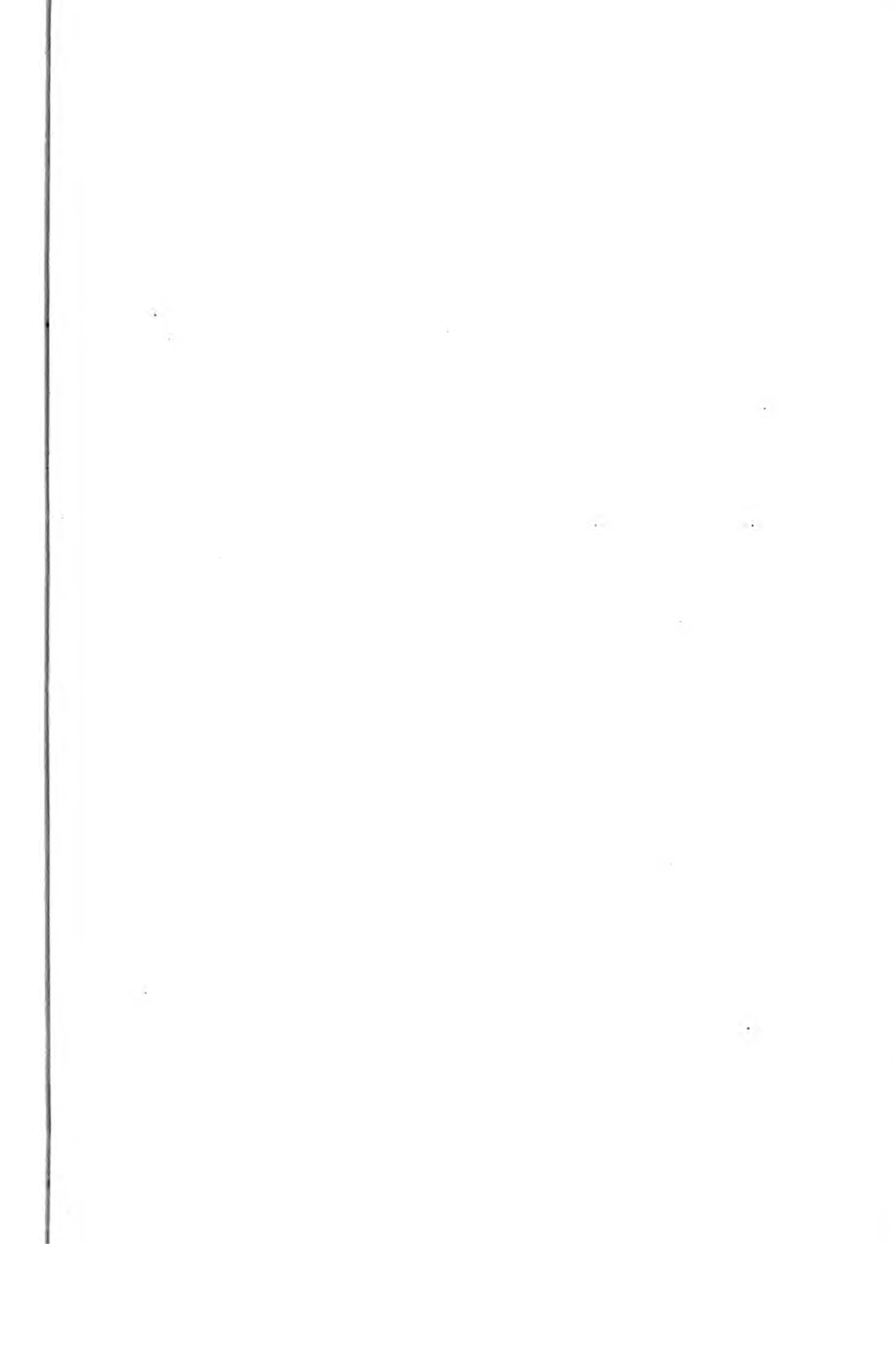
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